

## VPDES PERMIT FACT SHEET

This document gives pertinent information concerning the **reissuance** of the VPDES permit listed below. This permit is being processed as a **Minor**, Industrial permit. The effluent limitations contained in this permit will maintain the Water Quality Standards of 9 VAC 25-260 et seq. The discharge results from the operation of a water treatment facility which utilizes manganese greensand pressure filtration and continuous potassium permanganate regeneration to remove iron and manganese from well water in order to provide potable water for the convalescent care facility. This permit action consists of updating special conditions, evaluating current monitoring conditions, and adding new limitations.

1. **Facility Name and Address:** Riverside Convalescent Center  
P.O. Box 370  
Mathews, VA 23109  
  
Facility Location: Route 14 south of Mathews Courthouse  
  
**Owner Name:** Newport News General & Nonsectarian Hospital Assoc.  
  
Facility/Owner Contact: Guy K. Shelton, Jr.  
Title: Administrator  
Telephone: (804) 725-9443  
Email: [Guy.Shelton@rivhs.com](mailto:Guy.Shelton@rivhs.com)
2. Permit Number: VA0071641  
Permit Expiration Date: May 22, 2011
3. SIC Code: 4941
4. Application Complete: Date: December 13, 2010  
Permit Drafted By: Jeremy Kazio Date: March 29, 2011  
  
Reviewed By: Tamira Cohen Date: April 11, 2011  
Curt Linderman Date: April 18, 2011, June 1, 2011  
Kyle Winter Date: June 2, 2011  
  
Public Comment Period Dates: from July 8, 2011 to August 8, 2011  
Published Dates: July 7, 2011 and July 14, 2011 in *Gloucester-Mathews Gazette Journal*
5. Receiving Stream Name: Put-In Creek, UT  
Basin: Chesapeake Bay/Atlantic Ocean/Small Coastal Basins  
Subbasin: N/A  
Section: 2d  
Class: III  
Special Standards: None  
River Mile: 7-XCW000.25  
7-Day, 10-Year Low Flow (7Q10): 0 MGD  
1-Day, 10-Year Low Flow (1Q10): 0MGD  
30-Day, 5-Year Low Flow (30Q5): 0 MGD  
30-Day, 10-Year Low Flow (30Q10): 0 MGD  
7Q10 High Flow: 0 MGD  
1Q10 High Flow: 0 MGD  
Harmonic Mean Flow (HM): 0 MGD  
  
Tidal? No On 303(d) list? No

6. **Operator License Requirements:** Not Applicable.

7. **Reliability Class:** Not Applicable

8. **Permit Characterization:**

- |   |  |
|---|--|
| <input type="checkbox"/> Issuance                 | <input checked="" type="checkbox"/> Existing Discharge               |
| <input checked="" type="checkbox"/> Reissuance    | <input type="checkbox"/> Proposed Discharge                          |
| <input type="checkbox"/> Revoke & Reissue         | <input checked="" type="checkbox"/> Effluent Limited                 |
| <input type="checkbox"/> Owner Modification       | <input checked="" type="checkbox"/> Water Quality Limited            |
| <input type="checkbox"/> Board Modification       | <input type="checkbox"/> WET Limit                                   |
| <input type="checkbox"/> Change of Ownership/Name | <input type="checkbox"/> Interim Limits in Permit                    |
| Effective Date:                                   | <input type="checkbox"/> Interim Limits in Other Document (attached) |
| <input type="checkbox"/> Municipal                | <input checked="" type="checkbox"/> Compliance Schedule Required     |
| SIC Code(s):                                      | <input type="checkbox"/> Site Specific WQ Criteria                   |
| <input checked="" type="checkbox"/> Industrial    | <input type="checkbox"/> Variance to WQ Standards                    |
| SIC Code(s): 4941                                 | <input type="checkbox"/> Water Effects Ratio                         |
| <input type="checkbox"/> POTW                     | <input type="checkbox"/> Discharge to 303(d) Listed Segment          |
| <input type="checkbox"/> PVOTW                    | <input type="checkbox"/> Toxics Management Program Required          |
| <input checked="" type="checkbox"/> Private       | <input type="checkbox"/> Toxics Reduction Evaluation                 |
| <input type="checkbox"/> Federal                  | <input type="checkbox"/> Possible Interstate Effect                  |
| <input type="checkbox"/> State                    | <input type="checkbox"/> Storm Water Management Plan                 |

9. **Discharge Description**

Table 1: Discharge Description

OUTFALL NUMBER	DISCHARGE SOURCE	TREATMENT	FLOW
001	Filter backwash water	Concrete settling basins	0.0020 MGD

See **Attachment A** for facility diagram.

10. **Sewage Sludge Use or Disposal:** Not Applicable

11. **Discharge Location Description:**

See **Attachment A** for topographic maps and aerial photograph.

Map Name: Mathews (095A) Quadrangle

12. **Material Storage:**

All materials pertaining to this operation are stored inside the pump house.

13. **Ambient Water Quality Information:**

The receiving stream at the point of discharge has a 1Q10 and a 7Q10 of 0 MGD, thus the theoretical flow is comprised totally of effluent. Under these low flow conditions, these ambient data are not applicable for worst-case modeling; instead, effluent data from the permit application and Discharge Monitoring Reports (DMRs) were used to analyze permit limitations.

14. **Antidegradation Review & Comments:** Tier 1 **X** Tier 2 \_\_\_\_\_ Tier 3 \_\_\_\_\_

The State Water Control Board's Water Quality Standards includes an antidegradation policy (9 VAC 25-260-30). All state surface waters are provided one of three levels of antidegradation protection. For Tier 1 or existing use protection, existing uses of the water body and the water quality to protect those uses must be maintained. Tier 2 water bodies have water quality that is better than the water quality standards. Significant lowering of the water quality of Tier 2 waters is not allowed without an evaluation of the economic and social impacts. Tier 3 water bodies are

exceptional waters and are so designated by regulatory amendment. The antidegradation policy prohibits new or expanded discharges into exceptional waters.

The receiving waterbody, UT Put-in Creek, is determined to be a Tier I waterbody. This determination is a result of the stream's classification as an intermittent stream where beneficial uses cannot be fully attained (See **Attachment B** for Flow Frequency Memorandum by Jennifer V. Palmore, P.G. dated January 31, 2011).

15. **Site Inspection:** Date: May 13, 2008  
Performed by: Mike Dare (See **Attachment C**)

16. **Effluent Screening & Limitation Development:**

Table 2: Basis for Permit Limitations  
Outfall 001: Maximum Monthly Average Flow: 0.002 MGD (see DMR data, **Attachment D**)

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		MO. AVE.	WE. AVE.	MIN.	MAX.	FREQ.	SAMPLE TYPE
Flow (MGD)	NA	NA	NA	NA	NL	1/3 Months	Estimate
pH	1	NA	NA	6.0 (SU)	9.0 (SU)	1/3 Months	Grab
TSS	2	30 (mg/L)	NA	NA	60 (mg/L)	1/3 Months	Grab
TRC	1	0.019 (mg/L)	NA	NA	0.019 (mg/L)	1/Month	Grab
<p style="text-align: center;"><u>Basis for Effluent Limitations</u></p> <div style="display: flex; justify-content: space-between;"> <span>1. Water Quality Standards</span> <span>2. Best Professional Judgment (Technology Based)</span> </div>							

**Additional Information: Limitations and/or Monitoring**

pH:

The pH limit is derived from 9 VAC 25-260-50 (Water Quality Standards) for discharges to Class II or Class III waters in the Piedmont and Coastal Zones.

Total Suspended Solids (TSS):

The 2011 permit limitation for TSS is based on Best Professional Judgment in accordance with current agency guidance (Permit Manual, Section IN-5, Pg.27). Since the permittee has complied with this limitation during previous permit terms, the limitation cannot be removed or made less stringent.

Total Residual Chlorine (TRC):

The new 2011 permit limitation for TRC was calculated as described within this fact sheet section labeled "1-Water Quality Standards - Aquatic Life Evaluations"

**Additional Information: EPA Form 2C & Laboratory Reporting Screening**

Effluent testing results submitted by the permittee for EPA Form 2C have been summarized in **Attachment D** of this fact sheet. Also included are test results which are representative of those parameters which were found present in this facility's finished drinking water. Since the finished drinking water is used for backwashing, these data may provide further effluent characterization. Table 3 represents a summary of test results that were indicated as present at concentrations greater than the QL used by the laboratory. In addition, Table 3 also summarizes the results of DEQ screening evaluations conducted for each pollutant.

Table 3: EPA Form 2C Screening

POLLUTANTS OF CONCERN						
CHEMICAL	EPA Analysis	QL Used	TESTING RESULTS	Pollutant Category	Evaluation Type	Limitation or Monitoring Needed?
Total Manganese (µg/L)	200.8	5.0	340	R,Q	2	NO
Total Iron (µg/L)	200.7	5.0	110	R,Q	2	NO
Color (color units)	2120B	--	61	R,Q	3	NO
Total Copper (µg/L)	200.8	5.0	7.5	R,Q	1,2	NO
Chloroform (µg/L)	624	1.0	1.7	Q	2	NO
Hardness (mg/L)	2340C	2.0	300	Q	3	NO
Ammonia as N (mg/L)**	4500NH3-G	1.0	9.7	R,Q	1	NO**
TSS (mg/L)	2540D	4.0	4.4	Q	4	NO
Sodium (mg/L)	200.7	1.0	189	FW	3	NO
Barium (mg/L)	200.7	0.02	0.02	FW	2	NO
Iron (mg/L)	200.7	0.02	0.08	FW	2	NO
Manganese (mg/L)	200.7	0.02	0.17	FW	2	NO
Zinc (mg/L)	200.7	0.01	0.01	FW	1,2	NO
Alkalinity (mg CaCO3/L)	2320B	4.0	390	FW	3	NO
Conductivity (µmhos/cm)	2510B	10.0	1400	FW	3	NO
Hardness (mg CaCO3/L)	2340C	1.0	72	FW	3	NO
Calcium (mg/L)	200.7	0.05	8.0	FW	3	NO
Chloride (mg/L)	4500-CL E	6.0	162	FW	1,2	NO
Color (color units)	2120B	5.0	24	FW	3	NO
Nitrate+Nitrite (mg/L)	4500-NO3F & NO3B	0.02	0.04	FW	2	NO
Orthophosphate (mg/L)	4500-P E	0.04	1.13	FW	3	NO
pH (SU)	4500 H+	--	7.6	FW	1,4	NO
Total Dissolved Sulfides	2540 C	10	848	FW	3	NO
Turbidity (NTU)	2130 B	0.05	0.25	FW	3	NO
Gross Alpha (pCi/L)	900	5.0	<5.0	FW	2	NO
Gross Beta (pCi/L)	900	4.8	31.1	FW	2	NO
Radium 226 (pCi/L)	903.1	0.1	0.3	FW	2	NO

Pollutant Category: R = Required to be reported  
Q = Test results greater than laboratory QL  
FW = Test results representative of facility's finished drinking water

Evaluation Types: 1 = Water Quality Standards - Aquatic Life Evaluation (see below)  
2 = Water Quality Standards - Human Health Criteria Evaluation (see below)  
3 = No Base Value Available for Comparison  
4 = Compared Directly to 2006 Permit Limitation

1 - Water Quality Standards - Aquatic Life Evaluations: If it is determined that a specific pollutant may exist in a facility's effluent, a Reasonable Potential Analysis must be conducted in order to determine if it is statistically probable that future discharges may contain that pollutant in concentrations which are harmful to the aquatic life within the receiving stream. The first step of the analysis is determining the maximum concentration that may be discharged by the facility which will maintain the instream acute and chronic criteria contained in the *Virginia Water Quality Standards* (9 VAC 25-260 et.seq.). This maximum allowable pollutant concentration, called a wasteload allocation (WLA), is determined using a DEQ-created Excel spreadsheet deemed MSTRANTI, which requires inputs representing critical flow & water quality data for both the effluent and the receiving stream. The second step of the analysis utilizes another computer application, named STATS 2.0.4, to calculate the lognormal distribution of the identified pollutant concentration using data submitted by the permittee as a sample set. The average and maximum 97<sup>th</sup> percentiles of the distribution are calculated and then compared to the WLA's determined earlier. If the 97<sup>th</sup> percentiles exceed the WLA's, a limitation is deemed to be necessary, which is also calculated by STATS 2.0.4 based on EPA-guidelines for the control of toxic pollutants. The MSTRANTI spreadsheet and applicable STATS 2.0.4 results for those pollutants listed in Table 3 above are contained in **Attachment E** of this fact sheet.

Please note that inputs for MSTRANTI pertaining to the receiving stream's critical water quality matches those of the facility's discharge (see Item 13 of this fact sheet further explanation). Also note that an assumed value of 28 °C for temperature was used due to insufficient data provided by the permittee for determination of seasonal temperature variation. The hardness value employed was the result of calculating the mean of the two data points provided by the permittee (72 mg/L and 300 mg/L), with a result of 186 mg/L CaCO<sub>3</sub>.

In accordance with the current Permit Manual (Section IN-5, Pg. 27-28) and GM00-2011, a limitation for TRC has been included in the 2011 permit reissuance due to chlorine being a known additive to the finished water for the facility. The finished water is used to backwash the green sand filters approximately once per week, and therefore chlorine is likely to be present in the facility's effluent discharge. In order to ensure compliance with the Water Quality Standard for TRC within the receiving stream, a false data point was entered into the STATS program in order to "bypass" the program's Reasonable Potential Analysis and calculate a limitation.

**\*\* Please Note:** A limitation evaluation of the Ammonia test result (9.7 mg/L) submitted with the application for the 2011 permit reissuance indicated that a limitation of 10.1 mg/L was necessary to maintain Water Quality Standards. However, the permittee supplied additional Ammonia test results on 4/26/11, 5/9/11, 5/16/2011, and 5/23/11. A STATS evaluation of these additional data and the original test result indicates that a limitation for Ammonia is not necessary. Therefore the limitation was removed from the 2011 draft permit. Please see **Attachment E** for the STATS printout and chart indicating the concentrations and dates received.

2 - Water Quality Standards - Human Health Criteria Evaluation: Pollutants which do not have Aquatic Life water quality criteria are compared against any applicable Human Health criteria. Since the receiving stream to which this facility discharges is not considered a Public Water Supply (PWS) segment, only the respective "All Other Surface Waters" Human Health criteria listed in 9 VAC 25-260-140 B. were used to determine if further evaluation is required. The results of this evaluation are contained in Table 4 below. Additionally, PWS Human Health Criteria were also listed for informational purposes. Since the receiving water provides no 30Q5 or Harmonic Mean dilutions, the Human Health WLA's (WLA<sub>HH</sub>) are equal to the criteria contained in the Water Quality Standards.

Table 4: Human Health Criteria Screening

HUMAN HEALTH CRITERIA SCREENING TABLE				
CHEMICAL	Test Results	All Other Surface Waters Human Health Criteria	PWS Human Health Criteria	Further HH Evaluation Required?
Total Manganese (µg/L)	340	--	50	NO
Total Iron (µg/L)	110	--	300	NO
Total Copper (µg/L)	7.5	--	1300	NO
Chloroform (µg/L)	1.7	11000	340	NO
Barium (mg/L)	0.02	--	2.000	NO
Iron (mg/L)	0.08	--	0.300	NO
Manganese (mg/L)	0.17	--	0.050	NO
Zinc (mg/L)	0.01	26	7.4	NO
Chloride (mg/L)	162	--	250	NO
Nitrate+Nitrite (mg/L)	0.04	--	10000000	NO
Gross Alpha (pCi/L)	<5.0	--	15	NO
Gross Beta (pCi/L)	31.1	--	4	NO
Radium 226 (pCi/L)	0.3	--	5	NO
Radium 228 (pCi/L)	<1.0			

#### Additional Information: Watershed General Permit and Chesapeake Bay TMDL

This facility does not currently have coverage under the Watershed Nutrient General Permit (9 VAC 25-820) because it was not identified as a “significant discharger” during the promulgation of 9 VAC 25-720 (Water Quality Management Plan). Existing facilities that were not identified as significant dischargers may, nonetheless, be required to apply for coverage under the Watershed Nutrient General Permit if the facility has undergone a design flow expansion (municipal facilities), or has increased its delivered nutrient load to levels that are equivalent to a design flow expansion (industrial facilities) as outlined in § 62.1-44.19:15 (*Code of Virginia*), and 9 VAC 25-40-70 (*Regulation for Nutrient Enriched Waters and Dischargers within the Chesapeake Bay Watershed*).

Changes in the volume of wastewater generated from an industrial facility are typically tied to that facility’s production levels. In order to allow industrial permittees the freedom to increase or decrease production as needed, the effluent flow volumes used in permitting evaluations are based conservatively on actual flows instead of a design flow. These allowable variations in industrial effluent flow, which can be significant, do not necessarily warrant the installation of equipment for production or wastewater treatment. For example, an increase in daily production times (i.e. adding a work shift) may increase daily effluent volume discharged. Effluent volume may also increase if the originally installed treatment and/or production equipment was intentionally oversized to account for an expected increase in production at a later date.

It is necessary for an industrial permittee to obtain coverage under the Watershed Nutrient General Permit if the facility “expands to” a nutrient load greater than or equal to 2,300 lbs/yr of Total Nitrogen (TN) and/or 300 lbs/yr of Total Phosphorus (TP), which is the “equivalent load” of a municipal permittee with a design flow of 40,000 gallons per day. As stated above, since an increase in an industrial facility’s effluent volume is not necessarily dependent on installing equipment, the only way to determine if there has been an unanticipated increase in an industrial facility’s delivered nutrient load (an “expansion”) is to evaluate the effluent through data supplied by the permittee in the application for reissuance. This evaluation is used to determine: 1) if the facility’s delivered nutrient load is greater than 2,300 lbs/yr of TN and/or 300

lbs/yr of TP, and 2) if the delivered nutrient load has increased to a level which categorizes the industrial permittee as a “significant discharger” as defined in 9 VAC 25-720-10

Since this facility does not currently monitor nutrients, and did not provide Total Nitrogen and/or Total Phosphorus effluent concentration data with their application, the aforementioned nutrient evaluation was conducted on nitrate-nitrite and orthophosphate concentration data submitted by the facility (see **Attachment E**). The evaluation concludes that the permittee is projected to discharge less than 2,300 lbs/year of Total Nitrogen and/or 300 lbs/year of Total Phosphorus, and therefore is not required to obtain coverage under the Watershed Nutrient General Permit.

Please note: Because this evaluation was conducted on nutrient constituents rather than Total Nitrogen and Total Phosphorus, if the evaluation indicated that coverage under the Watershed General Permit was required, effluent concentration data for Total Nitrogen and Total Phosphorus would have been necessary to obtain from the permittee in order to increase the accuracy of the evaluation.

The U.S. EPA recently developed the Chesapeake Bay Total Maximum Daily Load (CB TMDL), which allocates maximum loadings for Total Nitrogen (TN), Total Phosphorus (TP), and Total Suspended Solids (TSS) to specific water body segments, point source dischargers, and non-point source dischargers in order to control nutrient-related pollution in the Chesapeake Bay watershed. This facility discharges to the Mobjack Bay Polyhaline segment identified as MOBPH. The CB TMDL has allotted the MOBPH segment aggregated annual TN, TP, and TSS loads for all point-source (listed in Table 5 below) and non-point-source dischargers. Although this facility is mentioned in the CB TMDL, there are no nutrient or TSS loads applied directly to the discharge.

Table 5: Segment MOBPH Aggregated Point Source WLA's

Total Nitrogen Wasteload Allocations (lbs/yr)		Total Phosphorus Wasteload Allocations (lbs/yr)		Total Suspended Solids Wasteload Allocations (lbs/yr)	
Edge of Stream (lbs/yr)	Delivered (lbs/yr)	Edge of Stream (lbs/yr)	Delivered (lbs/yr)	Edge of Stream (lbs/yr)	Delivered (lbs/yr)
67,792.68	67,759.70	9,638.40	9,573.71	2,229,647.64	2,225,021.80

**Total Nitrogen (see evaluation, Attachment E):**

An evaluation of the permittee's projected Total Nitrogen discharge, based on reported Nitrate-Nitrite and Ammonia concentrations of 0.040 mg/L and 9.7 mg/L, respectively, indicates that this facility is not expected to discharge greater than 361 lbs/year of Total Nitrogen, and therefore is not required to obtain coverage under the Watershed General Permit and is not considered a significant discharger of Total Nitrogen to the Chesapeake Bay. Additionally, the facility's projected Total Nitrogen annual load represents 0.5% of the delivered TN wasteload allocation assigned to point source dischargers within the MOBPH water segment per the CB TMDL. It is not expected that this facility's discharge will contribute to exceedances of the TN load allocation within the segment.

**Total Phosphorus (see evaluation, Attachment E):**

An evaluation of the permittee's projected Total Phosphorus discharge, based on a reported Orthophosphate concentration of 1.13 mg/L, indicates that this facility is not expected to discharge greater than 16.75 lbs/year of Total Phosphorus, and therefore is not required to obtain coverage under the Watershed General Permit and is not considered a significant discharger of Total Phosphorus to the Chesapeake Bay. Additionally, the facility's projected Total Phosphorus annual load represents 0.2% of the delivered TP wasteload allocation assigned to point source dischargers within the MOBPH water segment per the CB TMDL. It is

not expected that this facility's discharge will contribute to exceedances of the TP load allocation within the segment.

Total Suspended Solids (TSS):

TSS is limited by the permit. If the permittee complies with the monthly average concentration limitation in the 2011 permit (30 mg/L), the approximate TSS load is 183 lbs/yr, which represents 0.008% of the delivered TSS wasteload allocation assigned to point source dischargers within the MOBPH water segment per the CB TMDL. It is not expected that this facility's discharge will contribute to exceedances of the TSS load allocation within the segment.

17. **Antibacksliding Statement :** All limits in the 2011 permit are at least as stringent as the 2006 permit.
18. **Special Conditions:**

**Part B. Compliance Schedule**

**Rationale:** The VPDES Permit Regulation at 9 VAC 25-31-250 allows for schedules that will lead to compliance with the Clean Water Act, the State Water Control Law, and regulations promulgated under them. A compliance schedule has been provided for TRC in the 2011 permit reissuance.

**C1. Notification Levels**

**Rationale:** Required by VPDES Permit Regulation, 9 VAC 25-31-200 A for all manufacturing, commercial, mining, and silvicultural dischargers.

**C2. Operations & Maintenance Manual**

**Rationale:** Required by Code of Virginia § 62.1-44.16; VPDES Permit Regulation, 9 VAC 25-31-190 E, and 40 CFR 122.41(e). These require proper operation and maintenance of the permitted facility. Compliance with an approved O&M manual ensures this.

**C3. Materials Handling & Storage**

**Rationale:** 9 VAC 25-31-50 A prohibits the discharge of any wastes into State waters unless authorized by permit. Code of Virginia § 62.1-44.16 and 62.1-44.17 authorizes the Board to regulate the discharge of industrial waste or other waste.

**C4. Compliance Reporting**

**Rationale:** Authorized by VPDES Permit Regulation, 9 VAC 25-31-190 J 4 and 220 I. This condition is necessary when pollutants are monitored by the permittee and a maximum level of quantification and/or a specific analytical method is required in order to assess compliance with a permit limit or to compare effluent quality with a numeric criterion. The condition also establishes protocols for calculation of reported values.

**C5. Total Maximum Daily Load (TMDL)/Nutrient Reopener**

**Rationale:** Section 303(d) of the Clean Water Act requires that Total Maximum Daily Loads (TMDLs) be developed for streams listed as impaired. This special condition is to allow the permit to be reopened if necessary to bring it into compliance with any applicable TMDL approved for the receiving stream. The re-opener recognizes that, according to Section 402(o)(1) of the Clean Water Act, limits and/or conditions may be either more or less stringent than those contained in this permit. Specifically, they can be relaxed if they are the result of a TMDL, basin plan, or other wasteload allocation prepared under section 303 of the Act. 9 VAC 25-40-70 A authorizes DEQ to include technology-based annual concentration limits in the permits of facilities that have installed nutrient control equipment, whether by new construction, expansion or upgrade. 9 VAC 25-31-390 A authorizes DEQ to modify VPDES permits to promulgate amended water quality standards.



### C.6 Intermittent Discharge

**Rationale:** This site specific special condition is required because Ammonia, TRC, and Chloride were evaluated for the 2011 permit based on acute toxicity due to the intermittent nature of the permittee's discharge. Since chronic toxicity was not accounted for in this evaluation or in the calculation of the new TRC limitation, this special condition has been added in order to ensure that the permittee avoids those conditions which may cause chronic toxicity.

### C7. Facility Operations or Treatment Works Suspension/Closure

**Rationale:** Code of Virginia §§ 62.1-44.16 of the State Water Control law. This condition establishes the requirement to submit a closure plan for wastewater treatment facilities if a treatment facility is being replaced or is expected to close.

### C8. CER Permit Special Condition:

**Rationale:** §62.1-44.16 of the Code of Virginia requires industrial facilities to obtain DEQ approval for proposed discharges of industrial wastewater. A CER means a document setting forth preliminary concepts or basic information for the design of industrial wastewater treatment facilities and the supporting calculations for sizing the treatment operations."

### Part II, Conditions Applicable to All Permits

**Rationale:** VPDES Permit Regulation, 9 VAC 25-31-190 requires all VPDES permits to contain or specifically cite the conditions listed.

19. **NPDES Permit Rating Work Sheet:** Total Score: 55 (see **Attachment F**)

20. **Changes to 2006 Permit in 2011 Permit:**

Table 6: Changes to Part I.A. Effluent Limitations and Monitoring Requirements						
Parameter Changed	Effluent Limits Changed		Monitoring Requirement Changed		Reason for Change	Date
	From	To	From	To		
TRC	--	0.019 mg/L	--	1/Month	New limitation, please see Item 16 of this fact sheet for more information.	3/11
TSS	30.0 mg/L	30 mg/L	--	--	Limitation changed to reflect 2 significant figures in accordance with GM06-2016	3/11

Table 7: Changes to Special Conditions and Other Changes			
From	To	Special Condition Changed	Rationale
Cover Page	Cover Page	--	The structure and language of the cover page have been modified in accordance with new agency procedures and for streamlining purposes. Signatory requirements have also changed in accordance with the October 2008 DEQ Agency Policy Statement 2-09, "Delegations of Authority". Facility location description revised in accordance permittee description contained in the 2011 permit application.
Part I.A.1	Part I.A.1	Limitations & monitoring preamble.	Part I.A structure and language revised for acuity purposes.

--	Part I.A.1(a)	Monitoring requirements for 1/ 3 Months frequencies	New, added to clarify quarterly monitoring expectations.
--	Part I.A.1(b)	Significant figures	New, reflects changes made in agency procedure due to GM06-2016
--	Part I.A.1(c)	Schedule of Compliance reference	New, added to reference compliance schedule for new limitation for TRC
Part I.A.2	Part I.A.2	Visible Effluent Quality	No change
Part I.A.3	Part I.A.3	Effluent Sample Location	Revised for streamlining purposes.
--	Part I.A.4	Compliance Reporting special condition reference	New, added for acuity purposes
--	Part I.B	Compliance Schedule	New, added due to new 2011 permit limitation for TRC.
Part I.B.1	Part I.C.1	Notification Levels	No change.
Part I.B.4	Part I.C.2	Operations & Maintenance Manual	Language revised in accordance with current agency guidance (Permit Manual, Section IN-3 , Pg. 5, rev. 1/27/2010)
Part I.B.2	Part I.C.3	Materials Handling & Storage	Language revised in accordance with current agency guidance (Permit Manual, Section IN-3 , Pg. 6, rev. 1/27/2010)
Part I.B.3	Part I.C.4	Compliance Reporting Under Part I.A	Maximum acceptable QL for TRC added due to new 2011 permit limit. Language revised for clarity and in accordance with current agency guidance (Permit Manual, Section IN-3 , Pg. 15, rev. 1/27/2010) and PRO regional standard. Reporting instruction language pertaining to significant digits revised in accordance with GM06-2016 and current agency standard language.
Part I.B.5 & Part I.B.8	Part I.C.5	Nutrient/TMDL Reopener	Language revised to reflect current agency guidance (GM07-2008). Revised language addresses both nutrient reopener and TMDL reopener.
Part I.B.7	Part I.C.6	Intermittent Discharge Requirements	Language changed to limit a maximum of 3 consecutive days of discharge rather than 4. See rationale for special condition C.6. in Item 18 of this fact sheet for further information.
Part I.B.6	Part I.C.7	Closure Plan	Revised in accordance with current agency guidance (Permit Manual, Section IN-3, Pg.19, rev. 1/27/2010)
--	Part I.C.8	CER	New, added in accordance with agency decision (6/17/2010) to include in all industrial permits in order to comply with §62.1-44.16 Code of Virginia

21. **Variances/Alternate Limits or Conditions:** None

22. **Public Notice Information required by 9 VAC 25-31-280 B:**

Comment period:      Start Date: July 8, 2011      End Date: August 8, 2011  
Published Dates: July 7, 2011 & July 14, 2011  
Name of Newspaper: *Gloucester-Mathews Gazette Journal*

All pertinent information is on file and may be inspected or copied by contacting Jeremy Kazio at:

Virginia Department of Environmental Quality (DEQ)  
Piedmont Regional Office  
4949-A Cox Road  
Glen Allen, Virginia 23060-6296

Telephone Number 804/527-5044  
Facsimile Number 804/527-5106  
Email [Jeremy.Kazio@deq.virginia.gov](mailto:Jeremy.Kazio@deq.virginia.gov)

DEQ accepts comments and requests for public hearing by e-mail, fax or postal mail. All comments and requests must be in writing and be received by DEQ during the comment period. Submittals must include the names, mailing addresses and telephone numbers of the commenter/requester and of all persons represented by the commenter/requester. A request for public hearing must also include: 1) The reason why a public hearing is requested. 2) A brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requester, including how and to what extent such interest would be directly and adversely affected by the permit. 3) Specific references, where possible, to terms and conditions of the permit with suggested revisions. A public hearing may be held, including another comment period, if public response is significant and there are substantial, disputed issues relevant to the permit. The public may review the draft permit and application at the DEQ Piedmont Regional Office by appointment, or may request copies of the documents from the contact person listed above.

23. **Additional Comments:**

Previous Board Action: None

**Staff Comments:**

- a. A reduction in monitoring frequency was not considered for this permit reissuance due to the intermittent nature of the permittee's discharge
- b. This permit is being reissued subsequent to expiration due to administrative delays.
- c. Whole Effluent Toxicity (WET) monitoring has not been included with the 2011 permit reissuance because GM00-2012 (Part IV.1.a) allows for exclusions from WET monitoring for industrial activities which involve pumping of uncontaminated groundwater. Since the 2011 permit limitations are based on meeting Water Quality Standards at the discharge point, it is not necessary to include WET monitoring at this time.
- d. The settling basins described in Item 9 of this fact sheet are composed of impermeable concrete. As a result, wastewater retained within the tanks does not influence groundwater and therefore monitoring is unnecessary.
- e. The Virginia Department of Health – Office of Drinking Water indicated no objection to the existing discharge. Coordination with Virginia Department of Health-Division of Shellfish Sanitation indicated that the current activity will not affect the existing shellfish condemnation in the facility's receiving stream. (see **Attachment G**)
- f. The staff believes that the attached effluent limitations will maintain the Water Quality Standards adopted by the Board.
- g. The discharge is in conformance with the existing planning documents for the area.

- h. EPA has waived the right to comment and/or object to the adequacy of the permit.
- i. The permittee is current on payment of their annual maintenance fee last paid on September 29, 2010.
- j. The permittee was notified of the requirement to become an e-DMR participant via letter dated October 22, 2010. The permittee does not participate in the VEEP.
- k. This facility is not eligible for coverage under the Water Treatment Plant General Permit (9 VAC 25-860) because the new TRC limitation is more stringent than that contained in the general permit and is necessary to maintain Water Quality Standards.

24. **Public Comment:** During the 30-day public comment period, ten (10) comments representing fourteen (14) individuals were received via email only. Of these comments, four (4) were submitted in full compliance with the information requirements outlined in 9VAC25-230-40 of Procedural Rule No. 1. Five (5) comments were replicates of an initial mass mailing sent by the author of the first comment received. Two (2) employees of the newspaper *Gloucester-Mathews Gazette-Journal* provided comments, and one (1) of the public hearing requests was received from the Mathews County Administrator, who stated that he represented the county's Board of Supervisors.

Two newspapers, the *Gloucester-Mathews Gazette-Journal* and the *Daily Press* ran feature articles regarding this permit's reissuance during the 30 day comment period.

On August 23, 2011, PRO's Deputy Regional Director met with Mr. Whiteway, Mathews County Administrator to brief him on the proposed permit and discharge operations. Later that day, staff visited the Riverside Convalescent Center and examined the concrete settling tanks and the outfall and receiving stream. The facility appeared to be well maintained and staff observed no visible effects of the discharge from the permitted activity upon the Unnamed Tributary to Put-In Creek.

Staff has offered to prepare a Frequently Asked Questions (FAQ) document to assist Mathews County in responding to post-comment period citizen inquiries regarding the Riverside Convalescent Center discharge and treatment operations.

Due to the fact that the statutory requirements to hold a public hearing were not met, DEQ staff proceeded with the permit reissuance. (see **Attachment H**)

25. **303(d) Listed Segments (TMDL):**

The unnamed tributary was not assessed for any designated uses during the 2008 or 2010 305(b)/303(d) Water Quality Assessments, therefore the stream is considered a Category 3A water ("No data are available within the data window of the current assessment to determine if any designated use is attained and the water was not previously listed as impaired.")

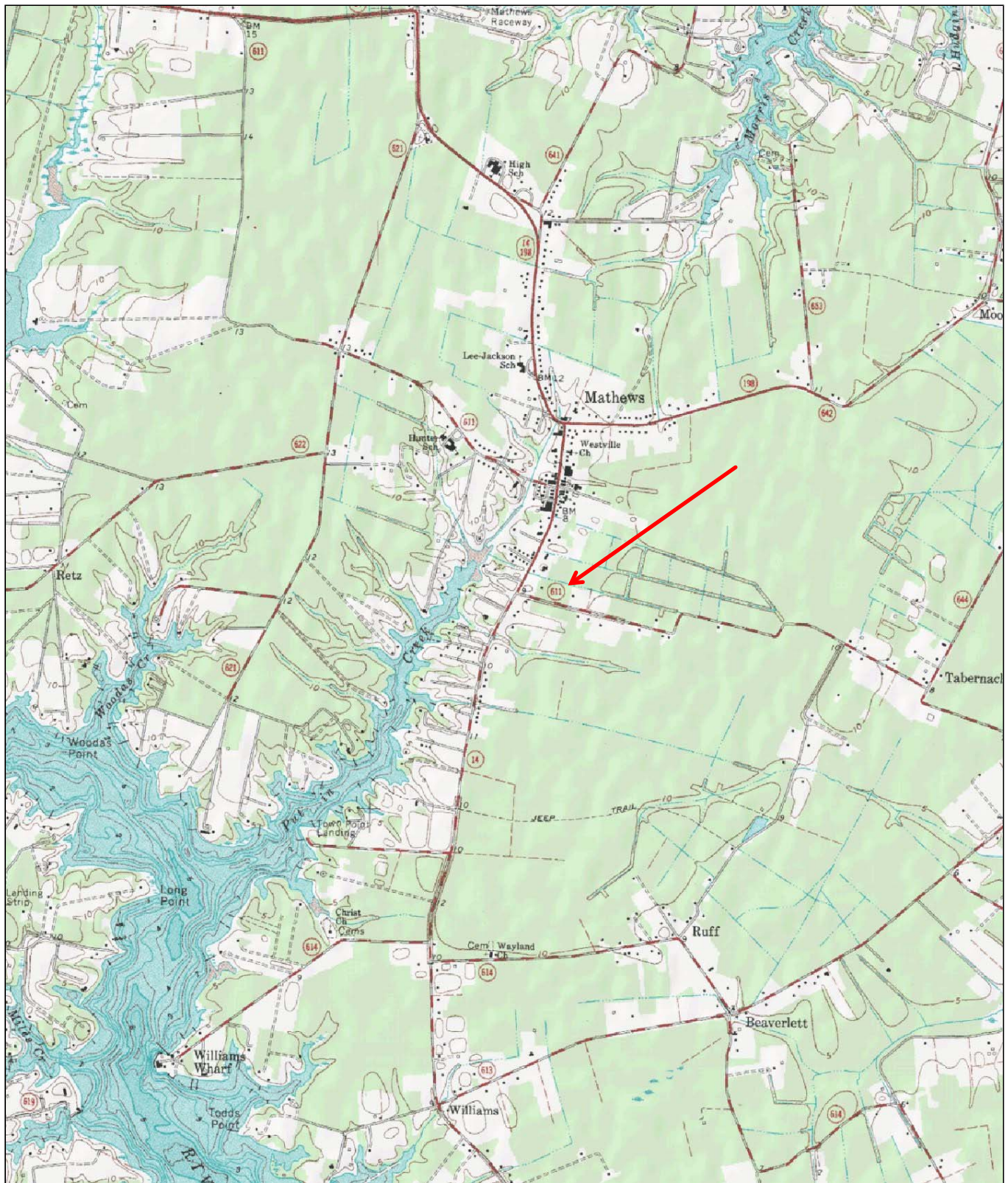
26. **Fact Sheet Attachment Guide:**

Attachment A	Facility Diagrams, Topographic Maps, & Aerial Photographs
Attachment B	Flow Frequency Memorandum
Attachment C	Site Inspection Report
Attachment D	DMR Data & Summary of Testing Results for Form 2 C
Attachment E	Effluent Limitation Analyses & Nutrient Evaluation
Attachment F	NPDES Permit Rating Worksheet
Attachment G	VDH-ODW & VDH-DSS Concurrence
Attachment H	Public Hearing Dispensation Memo

Riverside Convalescent Center  
VA0071641  
Fact Sheet Attachments

**Attachment A**

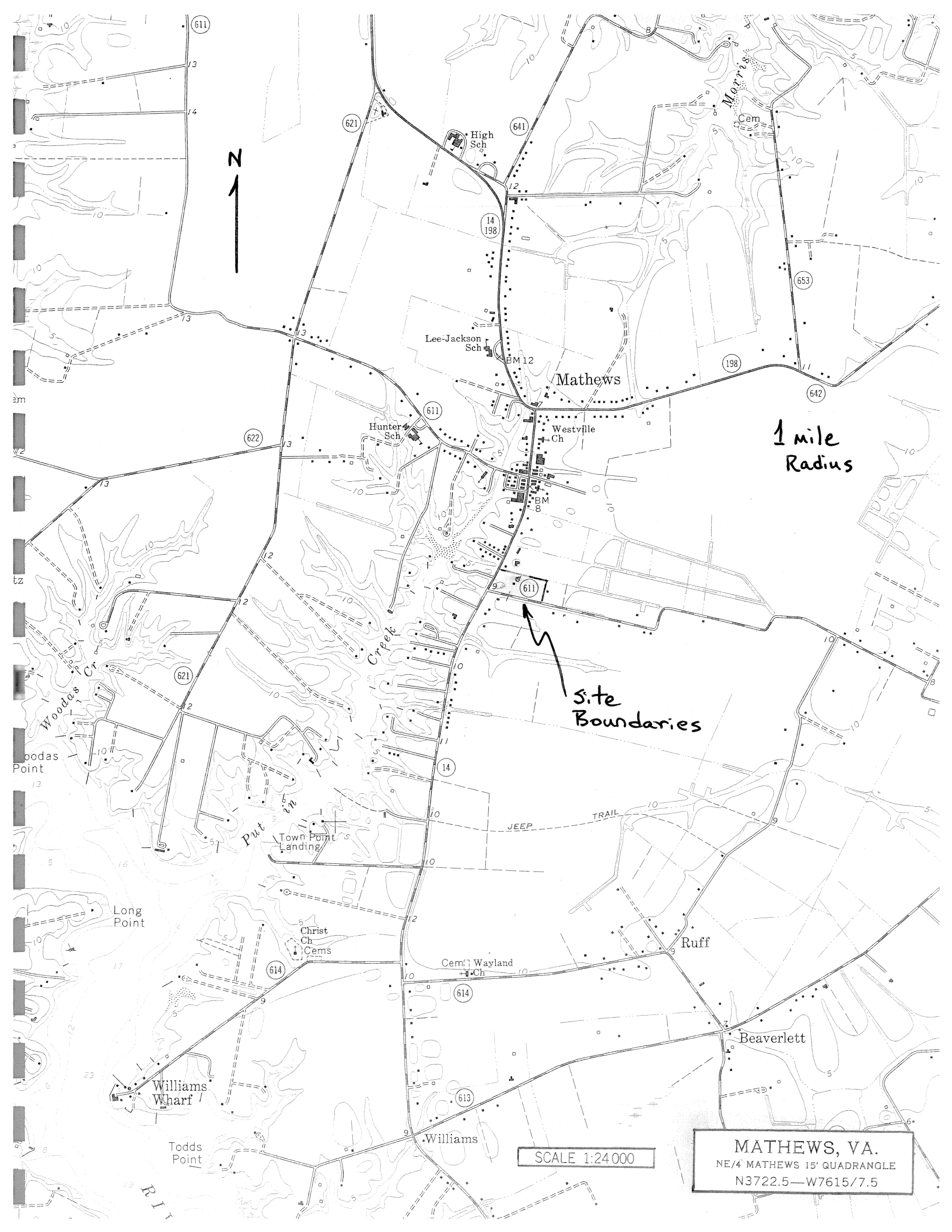
Facility Diagrams, Topographic Maps, & Aerial Photographs



0 0.75 Mi  
0 4000 Ft

Map provided by MyTopo.com





1 mile  
Radius

Site  
Boundaries

SCALE 1:24 000

MATHEWS, VA.  
NE/4 MATHEWS 15' QUADRANGLE  
N3722.5—W7615/7.5



Image © 2011 Commonwealth of Virginia  
Data SIO, NOAA, U.S. Navy, NGA, GEBCO  
© 2010 Google

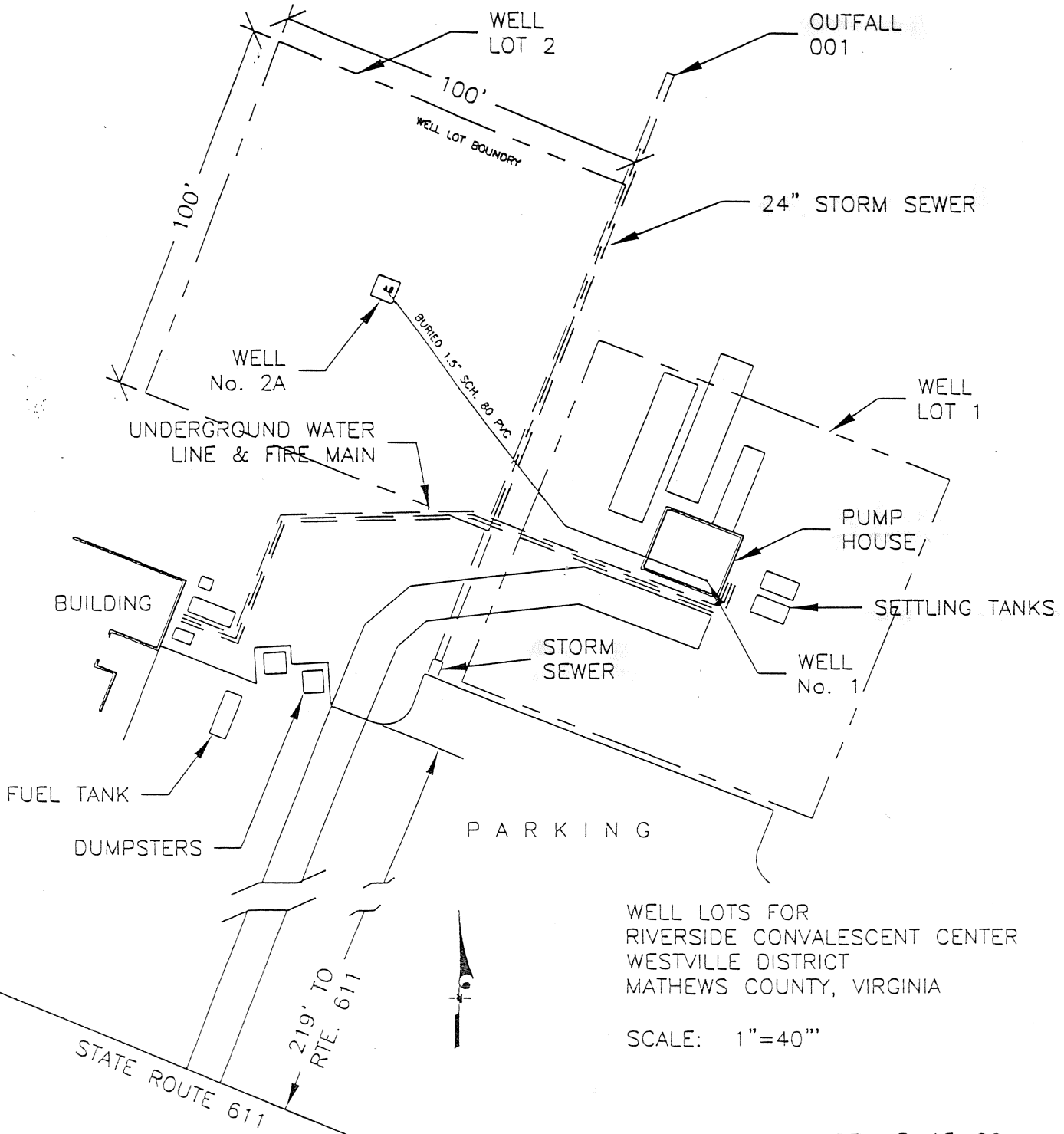
Google

lat 37.429052° lon -76.322990°

Feb 1, 2007

Eye alt 3857 ft

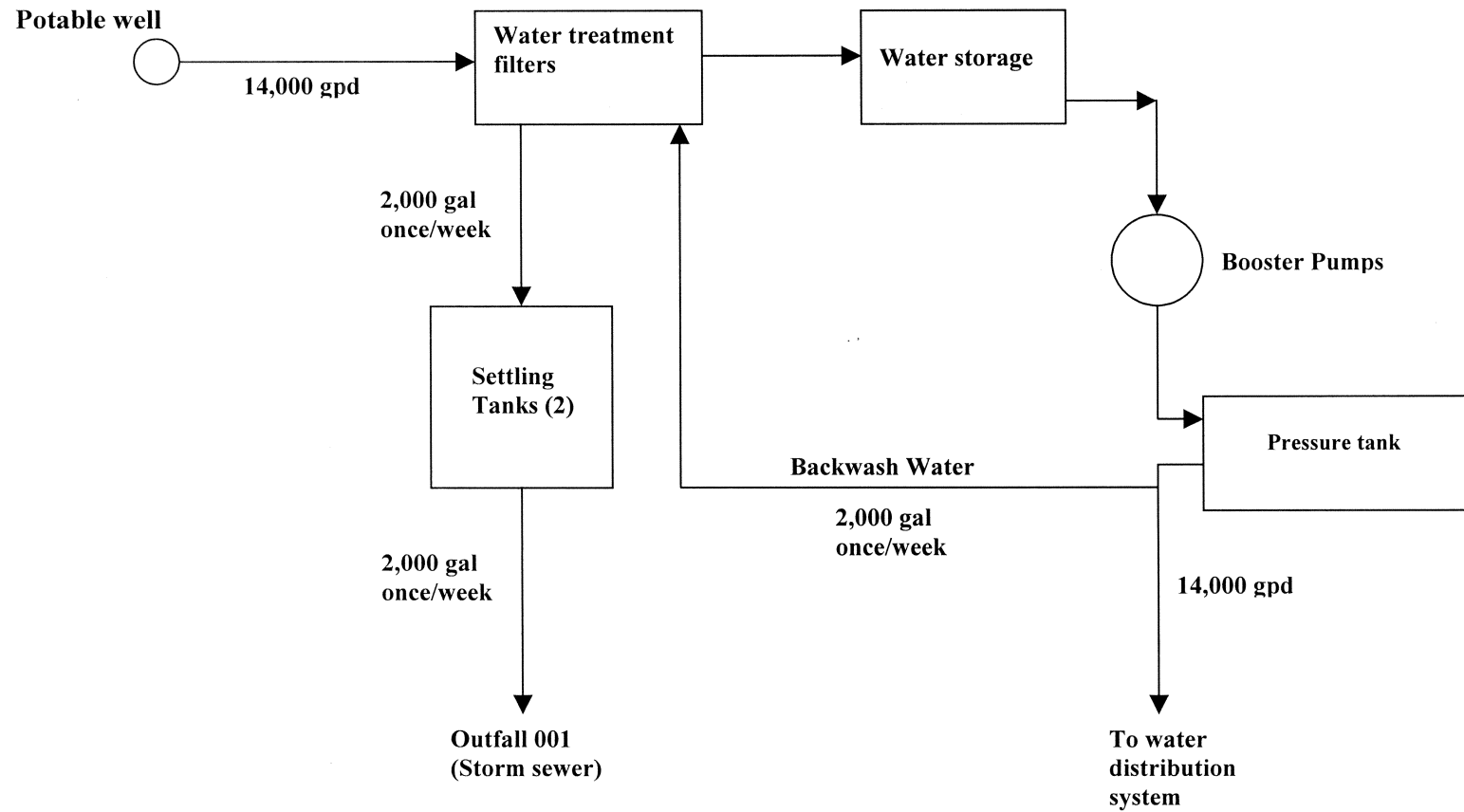




REV. 3-15-02

THIS DRAWING IS THE PROPERTY OF SYDNOR HYDRODYNAMICS, INC.				<b>SYDNOR HYDRODYNAMICS, INC.</b> 2111 MAGNOLIA ST. RICHMOND, VA 23223 PH 804-643-2725 FAX 804-788-9058			
THIS DRAWING IS SUBMITTED WITH THE AGREEMENT THAT IT IS NOT TO BE REPRODUCED, COPIED OR LOANED IN PART OR WHOLE. IT IS NOT TO BE USED IN ANY MANNER THAT MAY CONSTITUTE A DETRIMENT DIRECTLY OR INDIRECTLY TO SYDNOR. ACCEPTANCE OF DRAWING WILL BE CONSTRUED AS AN AGREEMENT TO THE ABOVE							
<b>RIVERSIDE CONVALESCENT CENTER WELL SITE PLAN</b>				JOB NAME COUNTY OF MATHEWS, VA			
CUSTOMER RIVERSIDE CONVALESCENT CENTER				SCALE 1" = 40'			
JOB NO.	SHEET	DATE	DRN. BY	REF. NO.	DRAWING NO.		
	1	4-25-96	K. HOEN	D9547	A9627		

**Riverside Convalescent Center  
Mathews County  
Line Drawing**



Riverside Convalescent Center  
VA0071641  
Fact Sheet Attachments

**Attachment B**

Flow Frequency Memorandum

# MEMORANDUM

DEPARTMENT OF ENVIRONMENTAL QUALITY  
Piedmont Regional Office  
4949-A Cox Road Glen Allen, Virginia 23060

---

**SUBJECT:** Flow Frequency Determination / 303(d) Status  
Riverside Convalescent Center – VA0071641

**TO:** Jeremy Kazio

**FROM:** Jennifer Palmore, P.G.

**DATE:** January 31, 2011

**COPIES:** File

The Riverside Convalescent Center wastewater treatment facility currently discharges to an unnamed tributary to Put-In Creek near Mathews Courthouse, VA. The outfall is located at rivermile 7-XCW000.25. Flow frequencies have been requested for this outfall for use in developing effluent limitations for the VPDES permit.

At the discharge point, the receiving stream is shown as intermittent on the USGS Mathews 7 ½' Quadrangle topographic map. The flow frequencies for intermittent streams are shown below.

**Put-In Creek, UT:**

1Q30 = 0.0 MGD	High Flow 1Q10 = 0.0 MGD
1Q10 = 0.0 MGD	High Flow 7Q10 = 0.0 MGD
7Q10 = 0.0 MGD	High Flow 30Q10 = 0.0 MGD
30Q10 = 0.0 MGD	HM = 0.0 MGD
30Q5 = 0.0 MGD	

The unnamed tributary was not assessed for any designated uses during the 2008 or draft 2010 305(b)/303(d) Water Quality Assessments, therefore the stream is considered a Category 3A water ("No data are available within the data window of the current assessment to determine if any designated use is attained and the water was not previously listed as impaired.")

Although the tributary is not impaired, the facility was included in the Chesapeake Bay TMDL which was approved by the EPA on 12/29/2010. The TMDL addressed all dissolved oxygen and SAV impairments in the Chesapeake Bay and its tidal tributaries. The facility is considered a non-significant discharger in the Mobjack Bay Polyhaline (MOBPH) segment. The non-significant wastewater permittees within the segment share the following aggregated wasteload allocations:

- 67,792.68 lbs/year total nitrogen
- 9,638.40 lbs/year total phosphorus
- 2,229,647.64 lbs/yr total suspended solids

Due to its intermittent nature, the stream is considered a Tier 1 water. Effluent data should be used to characterize the stream during low-flow conditions.

If you have any questions concerning this analysis, please let me know.

Riverside Convalescent Center  
VA0071641  
Fact Sheet Attachments

**Attachment C**

Site Inspection Report

# VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

## Piedmont Regional Office

### WASTEWATER FACILITY INSPECTION REPORT

<b>FACILITY NAME:</b>	<u>Riverside Convalescent Center WTP</u>	<b>INSPECTOR:</b>	<u>Mike Dare</u>
<b>PERMIT No.:</b>	<u>VA0071641</u>	<b>INSPECTION DATE:</b>	<u>May 13, 2008; 1000 hrs.</u>
<b>TYPE OF FACILITY:</b>	<u>Industrial Small</u>	<b>REPORT COMPLETED:</b>	<u>May 14, 2008</u>
<b>COUNTY/CITY:</b>	<u>Mathews</u>	<b>UNANNOUNCED INSPECTION:</b>	<u>NO</u>
<b>REVIEWED BY:</b>			
<b>PRESENT DURING INSPECTION:</b>	<u>Ed Taylor (Sydnor Hydro, Inc.)</u>		

#### ***I. OPERATIONAL UNIT REVIEW AND CONDITION:***

This water treatment plant consists of two Manganese Greensand Filters. (The Potassium Permanganate addition system was out of service awaiting repair at the time of inspection.) Chlorine bleach is added to maintain VDH required minimum free chlorine residual throughout the distribution system. Both filters are backwashed weekly.

The wastewater treatment plant consists of two settling tanks (in parallel). Each settling tank is equipped with a drain valve. Just prior to the weekly backwash of the filters both settling tanks (containing backwash water from the previous week) are drained through a discharge pipe to a nearby tributary of the Put-In Creek. Quarterly permit required samples are collected where the discharge pipe enters a parking lot stormdrain vault. This rather than at the tributary in order to avoid contamination from parking lot runoff. The filters are then backwashed one at a time with the wastewater flowing to an associated settling tank. The wastewater settles for the next week before being drained.

The settling tank drains are approximately 12" from the bottom of the tanks. A crude estimate of the amount of solids at the bottom of each tank was made - using a wooden pole - at the time of inspection. Approximately 2" to 3" of solids was noted at the North end of each tank.

#### ***II. ULTIMATE DISPOSAL OF SOLIDS:***

According to the Operations and Maintenance manual, solids from the settling tanks are pumped and hauled to a wastewater treatment plant by a service contractor.

#### ***III. FIELD DATA: \*pH analysis not performed at time of inspection.***

<b>Flow:</b>	<u>(N/A) MGD</u>	<b>Dissolved Oxygen:</b>	<u>(N/A) mg/L</u>	<b>Contact Chlorine Res.:</b>	<u>(N/A) mg/L</u>
<b>pH:</b>	<u>* S.U.</u>	<b>Final Chlorine Res.:</b>	<u>(N/A) mg/L</u>	<b>Temperature:</b>	<u>(N/A) deg C</u>
<b>Calibration Time/Initials/documentation:</b>	<u>N/A</u>				
<b>Condition of Effluent:</b>	<u>Clear</u>				
<b>Condition of Receiving Stream:</b>	<u>Clear</u>				
<b>Samples Collected during the inspection:</b>	<u>No</u>				

#### ***IV. PLANT OPERATIONS AND MAINTENANCE:***

<b>Operations and Maintenance Manual:</b>	<u>Developed 3/14/02; updated 8/16/06</u>
<b>Class and Number of Licensed Operators:</b>	<u>N/A</u>
<b>Alarm Systems and Alternate Power:</b>	<u>N/A</u>
<b>Any bypassing since last inspection?</b>	<u>No</u>
<b>When was the RPZ device last checked?</b>	<u>N/A</u>
<b>Name, number and description of pump stations:</b>	<u>N/A</u>

**V. COMMENTS:**

A small sandbar was noted just downstream of the stormdrain outfall at the tributary to the Put-In Creek. The sandbar is likely due to the runoff of sand from the parking lot rather than any impact from the filter system as settling tank discharge on the day of inspection was clear and TSS results reported on DMR's are well below permit limits.

Items evaluated during this inspection include (check all that apply):

<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		Operational Units
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		O & M Manual
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No		Maintenance Records
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A	Pathogen Reduction & Vector Attraction Reduction
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	Sludge Disposal Plan
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A	Groundwater Monitoring Plan
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A	Storm Water Pollution Prevention Plan
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	Permit Special Conditions
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A	Permit Water Quality Chemical Monitoring
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	Laboratory Records (see Lab Report)

**VI. GENERAL RECOMMENDATIONS:**

1. Develop a procedure for routinely checking the level of solids in the settling tanks and identify the level at which the solids will be removed. Include procedure in the operations and maintenance manual.

**VII. COMPLIANCE RECOMMENDATIONS/REQUEST FOR CORRECTIVE ACTION:**

1. None



**INSPECTION PHOTOS**



Riverside Convalescent Center - Mathews



Water storage tanks



Manganese Greensand Filter system



Settling tanks



Interior of settling tank after discharge



Settling tanks discharge to this stormdrain vault



**INSPECTION PHOTOS**



Settling tank discharging to stormdrain vault



The stormdrain discharges to tributary of Put-In Creek.  
A small sandbar was noted just downstream.



Sandbar in creek is probably a result of stormwater runoff carrying sand from parking lot.

**Attachment D**

DMR Data & Summary of Testing Results for Form 2 C

# Riverside Convalescent Center (VA0071641): Outfall 001

DMR Data July 2006 - February 2011

Due Date	Date Received	Flow (MGD)		pH (SU)		TSS (mg/L)	
		Monthly Average	Maximum	Minimum	Maximum	Monthly Average	Maximum
2006 Permit Limitation →		NL	NL	6.0	9.0	30	60
10-Jul-06	13-Jul-06	0.002	0.002	7.7	7.7	310	310
10-Sep-06	NULL	NULL	NULL	NULL	NULL	NULL	NULL
10-Oct-06	10-Oct-06	0.002	0.002	7.4	7.4	7	7
10-Dec-06	8-Jan-07	0.002	0.002	7.66	7.66	4	5
10-Mar-07	30-Apr-07	0.002	0.002	7.6	7.6	4	4
10-Jun-07	NULL	NULL	NULL	NULL	NULL	NULL	NULL
10-Jul-07	9-Jul-07	0.002	0.002	7.5	7.5	1	1
10-Sep-07	NULL	NULL	NULL	NULL	NULL	NULL	NULL
10-Dec-07	9-Oct-07	0.002	0.002	7.8	7.8	3	3
10-Mar-08	7-Jan-08	0.002	0.002	7.9	7.9	6	6
10-Jun-08	13-May-08	0.002	0.002	8.2	8.2	2	2
10-Sep-08	9-Jul-08	0.002	0.002	7.8	7.8	3	3
10-Dec-08	15-Oct-08	0.002	0.002	7.7	7.7	4	4
10-Jan-09	8-Jan-09	0.002	0.002	7.8	7.8	2	2
10-Mar-09	8-Apr-09	0.002	0.002	7.9	7.9	1	1
10-Jun-09	6-Jul-09	0.002	0.002	7.5	7.5	4	4
10-Sep-09	6-Jul-09	0.002	0.002	7.5	7.5	4	4
10-Dec-09	2-Oct-09	0.002	0.002	7.6	7.6	3	3
10-Mar-10	11-Jan-10	0.002	0.002	7.7	7.7	3.8	3.8
10-Jun-10	12-Apr-10	0.002	0.002	7.7	7.7	5.5	5.5
10-Sep-10	9-Jul-10	0.002	0.002	7.7	7.7	1.4	1.4
10-Dec-10	12-Oct-10	0.002	0.002	7.7	7.7	640	640
Average		0.002	0.002	7.7	7.7	53.1	53.1
Maximum		0.002	0.002		8.2	640.0	640.0
Minimum		0.002	0.002	7.4		1.0	1.0
90th Percentile		0.002	0.002	7.9	7.9	67.6	67.6
10th Percentile		0.002	0.002	7.5	7.5	1.3	1.3

= Values used in MSTRANTI spreadsheet for development of facility Wasteload Allocations  
 = Value does not comply with 2006 permit limitation

**Riverside Convalescent Center (VA0071651): Outfall 001 Summary of Form 2C Test Results**
**2011 Permit Reissuance**

V. INTAKE AND EFFLUENT CHARACTERISTICS								OUTFALL No. 001				
PART A												
Pollutant	Effluent							Units		Intake		
	Maximum Daily Value		Maximum 30-day Value		Long Term Average		NO. of Analyses			Long Term Average Value		NO. of Analyses
	Concentration	Mass	Concentration	Mass	Concentration	Mass		Concentration	Mass	Concentration	Mass	
a. Biochemical Oxygen Demand (BOD)												
b. Chemical Oxygen Demand												
c. Total Organic Carbon												
d. Total Suspended Solids (TSS)	4.4	33.3					1	mg/L	g/d			
e. Ammonia (as N)	9.7						1	mg/L				
f. Flow	2000						1	gpd				
g. Temperature (winter)	23						1	°C				
h. Temperature (summer)												
i. pH	Minimum	Maximum	Minimum	Maximum			1	STANDARD UNITS				
	7.3	7.3										

**POLLUTANTS OF CONCERN: Form 2C**

This section includes sample test results for pollutants that were noted in Form 2C (Item V.D & Item VI) as being produced as a byproduct of the facility's manufacturing process or which may be present in the facility's discharge. In addition, those pollutants that were marked "Believed Present" in Form 2C (Item V.B & Item V.C) are listed below **ONLY** if testing indicated that the respective pollutant was detected at a concentration greater than the QL used by the laboratory.

CHEMICAL	EPA ANALYSIS		QUANTIFICATION LEVEL (µg/L)		REPORTING RESULTS		REQUIRED SAMPLE TYPE
	Required	Used	Required	Used	Grab	Composite	
Total Manganese (µg/L)	--	200.8	--	5.0	340		--
Total Iron (µg/L)	--	200.7	--	5.0	110		--
Color (color units)	--	2120B	--	--	61		--
Total Cadmium (µg/L)	--	200.8	--	2.5	<2.5		--
Total Chromium (µg/L)	--	200.8	--	10	<10		--
Total Copper (µg/L)	--	200.8	--	5.0	7.5		--
Total Lead (µg/L)	--	200.8	--	5.0	<5		--
Total Mercury (µg/L)	--	245.1	--	0.2	<0.2		--
Total Zinc (µg/L)	--	200.8	--	25	<25		--
Chloroform (µg/L)	--	624	--	1.0	1.7		--
Hardness (mg/L)	--	2340C	--	2.0	300		--
Sodium (mg/L)	--	200.7	--	1.0	189		--
Barium (mg/L)	--	200.7	--	0.02	0.02		--
Iron (mg/L)	--	200.7	--	0.02	0.08		--
Manganese (mg/L)	--	200.7	--	0.02	0.17		--
Zinc (mg/L)	--	200.7	--	0.01	0.01		--
Alkalinity (mg CaCO3/L)	--	2320B	--	4.0	390		--
Conductivity (µmhos/cm)	--	2510B	--	10.0	1400		--
Hardness (mg CaCO3/L)	--	2340C	--	1.0	72		--
Calcium (mg/L)	--	200.7	--	0.05	8.0		--
Chloride (mg/L)	--	4500-CL E	--	6.0	162		--
Color (color units)	--	2120B	--	5.0	24		--
Nitrate+Nitrite (mg/L)	--	4500-NO3F & NO3B	--	0.02	0.04		--
Orthophosphate (mg/L)	--	4500-P E	--	0.04	1.13		--
pH (SU)	--	4500 H+	--	--	7.6		--
Total Dissolved Sulfides (mg/L)	--	2540 C	--	10	848		--
Turbidity (NTU)	--	2130 B	--	0.05	0.25		--
Gross Alpha (pCi/L)	--	900	--	5.0	<5.0		--
Gross Beta (pCi/L)	--	900	--	4.8	31.1		--
Radium 226 (pCi/L)	--	903.1	--	0.1	0.3		--
Radium 228 (pCi/L)	--	903.1	--	1.0	<1.0		--

Required to be tested in accordance with DEQ agency guidance (Permit Manual, Section IN-5, Pg.27: revised January 27, 2010).

Additional test results indicating concentrations greater than the QL used by the laboratory.

These test results are representative of those parameters which were found present in this facility's finished drinking water, which is also used for backwashing and expected to be representative of the facility's effluent.

**Attachment E**

Effluent Limitation Analyses & Nutrient Evaluation

# FRESHWATER WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name: **Riverside Convalescent Center**

Permit No.: **VA0071641**

Receiving Stream: **UT Put-In Creek**

Outfall : **001**

Version: OWP Guidance Memo 00-2011 (8/24/00)

Stream Information		Stream Flows		Mixing Information		Effluent Information	
Mean Hardness (as CaCO3) =	186 mg/L	1Q10 (Annual) =	0 MGD	Annual - 1Q10 Mix =	100 %	Mean Hardness (as CaCO3) =	186 mg/L
90% Temperature (Annual) =	28 deg C	7Q10 (Annual) =	0 MGD	- 7Q10 Mix =	100 %	90% Temp (Annual) =	28 deg C
90% Temperature (Wet season) =	NA deg C	30Q10 (Annual) =	0 MGD	- 30Q10 Mix =	100 %	90% Temp (Wet season) =	NA deg C
90% Maximum pH =	7.9 SU	1Q10 (Wet season) =	0 MGD	Wet Season - 1Q10 Mix =	100 %	90% Maximum pH =	7.9 SU
10% Maximum pH =	7.5 SU	30Q10 (Wet season) =	0 MGD	- 30Q10 Mix =	100 %	10% Maximum pH =	7.5 SU
Tier Designation (1 or 2) =	1	30Q5 =	0 MGD			Discharge Flow =	0.002 MGD
Public Water Supply (PWS) Y/N? =	n	Harmonic Mean =	0 MGD				
Trout Present Y/N? =	n						
Early Life Stages Present Y/N? =	y						

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations				Lowest LTA
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	
Acenaphthene	0	--	--	na	9.9E+02	--	--	na	9.9E+02	--	--	--	--	--	--	--	--	--	--	na	9.9E+02	--
Acrolein	0	--	--	na	9.3E+00	--	--	na	9.3E+00	--	--	--	--	--	--	--	--	--	--	na	9.3E+00	--
Acrylonitrile <sup>C</sup>	0	--	--	na	2.5E+00	--	--	na	2.5E+00	--	--	--	--	--	--	--	--	--	--	na	2.5E+00	--
Aldrin <sup>C</sup>	0	3.0E+00	--	na	5.0E-04	3.0E+00	--	na	5.0E-04	--	--	--	--	--	--	--	--	3.0E+00	--	na	5.0E-04	1.23E+00
Ammonia-N (mg/l) (Yearly)	0	1.01E+01	1.17E+00	na	--	1.01E+01	1.17E+00	na	--	--	--	--	--	--	--	--	--	1.01E+01	1.17E+00	na	--	7.05E-01
Ammonia-N (mg/l) (High Flow)	0	1.01E+01	#VALUE!	na	--	1.0E+01	#VALUE!	na	--	--	--	--	--	--	--	--	--	1.0E+01	#VALUE!	na	--	#VALUE!
Anthracene	0	--	--	na	4.0E+04	--	--	na	4.0E+04	--	--	--	--	--	--	--	--	--	--	na	4.0E+04	--
Antimony	0	--	--	na	6.4E+02	--	--	na	6.4E+02	--	--	--	--	--	--	--	--	--	--	na	6.4E+02	--
Arsenic	0	3.4E+02	1.5E+02	na	--	3.4E+02	1.5E+02	na	--	--	--	--	--	--	--	--	--	3.4E+02	1.5E+02	na	--	9.02E+01
Barium	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--	--
Benzene <sup>C</sup>	0	--	--	na	5.1E+02	--	--	na	5.1E+02	--	--	--	--	--	--	--	--	--	--	na	5.1E+02	--
Benzidine <sup>C</sup>	0	--	--	na	2.0E-03	--	--	na	2.0E-03	--	--	--	--	--	--	--	--	--	--	na	2.0E-03	--
Benzo (a) anthracene <sup>C</sup>	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	1.8E-01	--
Benzo (b) fluoranthene <sup>C</sup>	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	1.8E-01	--
Benzo (k) fluoranthene <sup>C</sup>	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	1.8E-01	--
Benzo (a) pyrene <sup>C</sup>	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	1.8E-01	--
Bis(2-Chloroethyl) Ether <sup>C</sup>	0	--	--	na	5.3E+00	--	--	na	5.3E+00	--	--	--	--	--	--	--	--	--	--	na	5.3E+00	--
Bis(2-Chloroisopropyl) Ether	0	--	--	na	6.5E+04	--	--	na	6.5E+04	--	--	--	--	--	--	--	--	--	--	na	6.5E+04	--
Bis 2-Ethylhexyl Phthalate <sup>C</sup>	0	--	--	na	2.2E+01	--	--	na	2.2E+01	--	--	--	--	--	--	--	--	--	--	na	2.2E+01	--
Bromoform <sup>C</sup>	0	--	--	na	1.4E+03	--	--	na	1.4E+03	--	--	--	--	--	--	--	--	--	--	na	1.4E+03	--
Butylbenzylphthalate	0	--	--	na	1.9E+03	--	--	na	1.9E+03	--	--	--	--	--	--	--	--	--	--	na	1.9E+03	--
Cadmium	0	7.9E+00	1.8E+00	na	--	7.9E+00	1.8E+00	na	--	--	--	--	--	--	--	--	--	7.9E+00	1.8E+00	na	--	1.11E+00
Carbon Tetrachloride <sup>C</sup>	0	--	--	na	1.6E+01	--	--	na	1.6E+01	--	--	--	--	--	--	--	--	--	--	na	1.6E+01	--
Chlordane <sup>C</sup>	0	2.4E+00	4.3E-03	na	8.1E-03	2.4E+00	4.3E-03	na	8.1E-03	--	--	--	--	--	--	--	--	2.4E+00	4.3E-03	na	8.1E-03	2.58E-03
Chloride	0	8.6E+05	2.3E+05	na	--	8.6E+05	2.3E+05	na	--	--	--	--	--	--	--	--	--	8.6E+05	2.3E+05	na	--	1.38E+05
TRC	0	1.9E+01	1.1E+01	na	--	1.9E+01	1.1E+01	na	--	--	--	--	--	--	--	--	--	1.9E+01	1.1E+01	na	--	6.61E+00
Chlorobenzene	0	--	--	na	1.6E+03	--	--	na	1.6E+03	--	--	--	--	--	--	--	--	--	--	na	1.6E+03	--
Chlorodibromomethane <sup>C</sup>	0	--	--	na	1.3E+02	--	--	na	1.3E+02	--	--	--	--	--	--	--	--	--	--	na	1.3E+02	--

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations				Lowest LTA
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	
Chloroform	0	--	--	na	1.1E+04	--	--	na	1.1E+04	--	--	--	--	--	--	--	--	--	--	na	1.1E+04	--
2-Chloronaphthalene	0	--	--	na	1.6E+03	--	--	na	1.6E+03	--	--	--	--	--	--	--	--	--	--	na	1.6E+03	--
2-Chlorophenol	0	--	--	na	1.5E+02	--	--	na	1.5E+02	--	--	--	--	--	--	--	--	--	--	na	1.5E+02	--
Chlorpyrifos	0	8.3E-02	4.1E-02	na	--	8.3E-02	4.1E-02	na	--	--	--	--	--	--	--	--	--	8.3E-02	4.1E-02	na	--	2.46E-02
Chromium III	0	9.5E+02	1.2E+02	na	--	9.5E+02	1.2E+02	na	--	--	--	--	--	--	--	--	--	9.5E+02	1.2E+02	na	--	7.41E+01
Chromium VI	0	1.6E+01	1.1E+01	na	--	1.6E+01	1.1E+01	na	--	--	--	--	--	--	--	--	--	1.6E+01	1.1E+01	na	--	6.58E+00
Chromium, Total	0	--	--	1.0E+02	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--	--
Chrysene <sup>C</sup>	0	--	--	na	1.8E-02	--	--	na	1.8E-02	--	--	--	--	--	--	--	--	--	--	na	1.8E-02	--
Copper	0	2.4E+01	1.5E+01	na	--	2.4E+01	1.5E+01	na	--	--	--	--	--	--	--	--	--	2.4E+01	1.5E+01	na	--	9.15E+00
Cyanide, Free	0	2.2E+01	5.2E+00	na	1.6E+04	2.2E+01	5.2E+00	na	1.6E+04	--	--	--	--	--	--	--	--	2.2E+01	5.2E+00	na	1.6E+04	3.13E+00
DDD <sup>C</sup>	0	--	--	na	3.1E-03	--	--	na	3.1E-03	--	--	--	--	--	--	--	--	--	--	na	3.1E-03	--
DDE <sup>C</sup>	0	--	--	na	2.2E-03	--	--	na	2.2E-03	--	--	--	--	--	--	--	--	--	--	na	2.2E-03	--
DDT <sup>C</sup>	0	1.1E+00	1.0E-03	na	2.2E-03	1.1E+00	1.0E-03	na	2.2E-03	--	--	--	--	--	--	--	--	1.1E+00	1.0E-03	na	2.2E-03	6.01E-04
Demeton	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	--	--	--	--	--	--	--	--	1.0E-01	na	--	6.01E-02
Diazinon	0	1.7E-01	1.7E-01	na	--	1.7E-01	1.7E-01	na	--	--	--	--	--	--	--	--	--	1.7E-01	1.7E-01	na	--	6.99E-02
Dibenz(a,h)anthracene <sup>C</sup>	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	1.8E-01	--
1,2-Dichlorobenzene	0	--	--	na	1.3E+03	--	--	na	1.3E+03	--	--	--	--	--	--	--	--	--	--	na	1.3E+03	--
1,3-Dichlorobenzene	0	--	--	na	9.6E+02	--	--	na	9.6E+02	--	--	--	--	--	--	--	--	--	--	na	9.6E+02	--
1,4-Dichlorobenzene	0	--	--	na	1.9E+02	--	--	na	1.9E+02	--	--	--	--	--	--	--	--	--	--	na	1.9E+02	--
3,3-Dichlorobenzidine <sup>C</sup>	0	--	--	na	2.8E-01	--	--	na	2.8E-01	--	--	--	--	--	--	--	--	--	--	na	2.8E-01	--
Dichlorobromomethane <sup>C</sup>	0	--	--	na	1.7E+02	--	--	na	1.7E+02	--	--	--	--	--	--	--	--	--	--	na	1.7E+02	--
1,2-Dichloroethane <sup>C</sup>	0	--	--	na	3.7E+02	--	--	na	3.7E+02	--	--	--	--	--	--	--	--	--	--	na	3.7E+02	--
1,1-Dichloroethylene	0	--	--	na	7.1E+03	--	--	na	7.1E+03	--	--	--	--	--	--	--	--	--	--	na	7.1E+03	--
1,2-trans-dichloroethylene	0	--	--	na	1.0E+04	--	--	na	1.0E+04	--	--	--	--	--	--	--	--	--	--	na	1.0E+04	--
2,4-Dichlorophenol	0	--	--	na	2.9E+02	--	--	na	2.9E+02	--	--	--	--	--	--	--	--	--	--	na	2.9E+02	--
2,4-Dichlorophenoxy acetic acid (2,4-D)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--	--
1,2-Dichloropropane <sup>C</sup>	0	--	--	na	1.5E+02	--	--	na	1.5E+02	--	--	--	--	--	--	--	--	--	--	na	1.5E+02	--
1,3-Dichloropropene <sup>C</sup>	0	--	--	na	2.1E+02	--	--	na	2.1E+02	--	--	--	--	--	--	--	--	--	--	na	2.1E+02	--
Dieldrin <sup>C</sup>	0	2.4E-01	5.6E-02	na	5.4E-04	2.4E-01	5.6E-02	na	5.4E-04	--	--	--	--	--	--	--	--	2.4E-01	5.6E-02	na	5.4E-04	3.37E-02
Diethyl Phthalate	0	--	--	na	4.4E+04	--	--	na	4.4E+04	--	--	--	--	--	--	--	--	--	--	na	4.4E+04	--
2,4-Dimethylphenol	0	--	--	na	8.5E+02	--	--	na	8.5E+02	--	--	--	--	--	--	--	--	--	--	na	8.5E+02	--
Dimethyl Phthalate	0	--	--	na	1.1E+06	--	--	na	1.1E+06	--	--	--	--	--	--	--	--	--	--	na	1.1E+06	--
Di-n-Butyl Phthalate	0	--	--	na	4.5E+03	--	--	na	4.5E+03	--	--	--	--	--	--	--	--	--	--	na	4.5E+03	--
2,4 Dinitrophenol	0	--	--	na	5.3E+03	--	--	na	5.3E+03	--	--	--	--	--	--	--	--	--	--	na	5.3E+03	--
2-Methyl-4,6-Dinitrophenol	0	--	--	na	2.8E+02	--	--	na	2.8E+02	--	--	--	--	--	--	--	--	--	--	na	2.8E+02	--
2,4-Dinitrotoluene <sup>C</sup>	0	--	--	na	3.4E+01	--	--	na	3.4E+01	--	--	--	--	--	--	--	--	--	--	na	3.4E+01	--
Dioxin 2,3,7,8- tetrachlorodibenzo-p-dioxin	0	--	--	na	5.1E-08	--	--	na	5.1E-08	--	--	--	--	--	--	--	--	--	--	na	5.1E-08	--
1,2-Diphenylhydrazine <sup>C</sup>	0	--	--	na	2.0E+00	--	--	na	2.0E+00	--	--	--	--	--	--	--	--	--	--	na	2.0E+00	--
Alpha-Endosulfan	0	2.2E-01	5.6E-02	na	8.9E+01	2.2E-01	5.6E-02	na	8.9E+01	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	na	8.9E+01	3.37E-02
Beta-Endosulfan	0	2.2E-01	5.6E-02	na	8.9E+01	2.2E-01	5.6E-02	na	8.9E+01	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	na	8.9E+01	3.37E-02
Alpha + Beta Endosulfan	0	2.2E-01	5.6E-02	--	--	2.2E-01	5.6E-02	--	--	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	--	--	3.37E-02
Endosulfan Sulfate	0	--	--	na	8.9E+01	--	--	na	8.9E+01	--	--	--	--	--	--	--	--	--	--	na	8.9E+01	--
Endrin	0	8.6E-02	3.6E-02	na	6.0E-02	8.6E-02	3.6E-02	na	6.0E-02	--	--	--	--	--	--	--	--	8.6E-02	3.6E-02	na	6.0E-02	2.16E-02
Endrin Aldehyde	0	--	--	na	3.0E-01	--	--	na	3.0E-01	--	--	--	--	--	--	--	--	--	--	na	3.0E-01	--
Ethylbenzene	0	--	--	na	2.1E+03	--	--	na	2.1E+03	--	--	--	--	--	--	--	--	--	--	na	2.1E+03	--
Fluoranthene	0	--	--	na	1.4E+02	--	--	na	1.4E+02	--	--	--	--	--	--	--	--	--	--	na	1.4E+02	--
Fluorene	0	--	--	na	5.3E+03	--	--	na	5.3E+03	--	--	--	--	--	--	--	--	--	--	na	5.3E+03	--



Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations				Lowest LTA
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	
Foaming Agents	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--	--
Guthion	0	--	1.0E-02	na	--	--	1.0E-02	na	--	--	--	--	--	--	--	--	--	--	1.0E-02	na	--	6.01E-03
Heptachlor <sup>C</sup>	0	5.2E-01	3.8E-03	na	7.9E-04	5.2E-01	3.8E-03	na	7.9E-04	--	--	--	--	--	--	--	--	5.2E-01	3.8E-03	na	7.9E-04	2.28E-03
Heptachlor Epoxide <sup>C</sup>	0	5.2E-01	3.8E-03	na	3.9E-04	5.2E-01	3.8E-03	na	3.9E-04	--	--	--	--	--	--	--	--	5.2E-01	3.8E-03	na	3.9E-04	2.28E-03
Hexachlorobenzene <sup>C</sup>	0	--	--	na	2.9E-03	--	--	na	2.9E-03	--	--	--	--	--	--	--	--	--	--	na	2.9E-03	--
Hexachlorobutadiene <sup>C</sup>	0	--	--	na	1.8E+02	--	--	na	1.8E+02	--	--	--	--	--	--	--	--	--	--	na	1.8E+02	--
Hexachlorocyclohexane Alpha-BHC <sup>C</sup>	0	--	--	na	4.9E-02	--	--	na	4.9E-02	--	--	--	--	--	--	--	--	--	--	na	4.9E-02	--
Hexachlorocyclohexane Beta-BHC <sup>C</sup>	0	--	--	na	1.7E-01	--	--	na	1.7E-01	--	--	--	--	--	--	--	--	--	--	na	1.7E-01	--
Hexachlorocyclohexane Gamma-BHC <sup>C</sup> (Lindane)	0	9.5E-01	na	na	1.8E+00	9.5E-01	--	na	1.8E+00	--	--	--	--	--	--	--	--	9.5E-01	--	na	1.8E+00	3.90E-01
Hexachlorocyclopentadiene	0	--	--	na	1.1E+03	--	--	na	1.1E+03	--	--	--	--	--	--	--	--	--	--	na	1.1E+03	--
Hexachloroethane <sup>C</sup>	0	--	--	na	3.3E+01	--	--	na	3.3E+01	--	--	--	--	--	--	--	--	--	--	na	3.3E+01	--
Hydrogen Sulfide	0	--	2.0E+00	na	--	--	2.0E+00	na	--	--	--	--	--	--	--	--	--	--	2.0E+00	na	--	1.20E+00
Indeno (1,2,3-cd) pyrene <sup>C</sup>	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	1.8E-01	--
Iron	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--	--
Isophorone <sup>C</sup>	0	--	--	na	9.6E+03	--	--	na	9.6E+03	--	--	--	--	--	--	--	--	--	--	na	9.6E+03	--
Kepone	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	--	0.0E+00	na	--	0.00E+00
Lead	0	2.6E+02	3.0E+01	na	--	2.6E+02	3.0E+01	na	--	--	--	--	--	--	--	--	--	2.6E+02	3.0E+01	na	--	1.79E+01
Malathion	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	--	--	--	--	--	--	--	--	1.0E-01	na	--	6.01E-02
Manganese	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--	--
Mercury	0	1.4E+00	7.7E-01	--	--	1.4E+00	7.7E-01	--	--	--	--	--	--	--	--	--	--	1.4E+00	7.7E-01	--	--	4.63E-01
Methyl Bromide	0	--	--	na	1.5E+03	--	--	na	1.5E+03	--	--	--	--	--	--	--	--	--	--	na	1.5E+03	--
Methylene Chloride <sup>C</sup>	0	--	--	na	5.9E+03	--	--	na	5.9E+03	--	--	--	--	--	--	--	--	--	--	na	5.9E+03	--
Methoxychlor	0	--	3.0E-02	na	--	--	3.0E-02	na	--	--	--	--	--	--	--	--	--	--	3.0E-02	na	--	1.80E-02
Mirex	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	--	0.0E+00	na	--	0.00E+00
Nickel	0	3.1E+02	3.4E+01	na	4.6E+03	3.1E+02	3.4E+01	na	4.6E+03	--	--	--	--	--	--	--	--	3.1E+02	3.4E+01	na	4.6E+03	2.06E+01
Nitrate (as N)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--	--
Nitrobenzene	0	--	--	na	6.9E+02	--	--	na	6.9E+02	--	--	--	--	--	--	--	--	--	--	na	6.9E+02	--
N-Nitrosodimethylamine <sup>C</sup>	0	--	--	na	3.0E+01	--	--	na	3.0E+01	--	--	--	--	--	--	--	--	--	--	na	3.0E+01	--
N-Nitrosodiphenylamine <sup>C</sup>	0	--	--	na	6.0E+01	--	--	na	6.0E+01	--	--	--	--	--	--	--	--	--	--	na	6.0E+01	--
N-Nitrosodi-n-propylamine <sup>C</sup>	0	--	--	na	5.1E+00	--	--	na	5.1E+00	--	--	--	--	--	--	--	--	--	--	na	5.1E+00	--
Nonylphenol	0	2.8E+01	6.6E+00	--	--	2.8E+01	6.6E+00	na	--	--	--	--	--	--	--	--	--	2.8E+01	6.6E+00	na	--	3.97E+00
Parathion	0	6.5E-02	1.3E-02	na	--	6.5E-02	1.3E-02	na	--	--	--	--	--	--	--	--	--	6.5E-02	1.3E-02	na	--	7.81E-03
PCB Total <sup>C</sup>	0	--	1.4E-02	na	6.4E-04	--	1.4E-02	na	6.4E-04	--	--	--	--	--	--	--	--	--	1.4E-02	na	6.4E-04	8.42E-03
Pentachlorophenol <sup>C</sup>	0	1.4E+01	1.1E+01	na	3.0E+01	1.4E+01	1.1E+01	na	3.0E+01	--	--	--	--	--	--	--	--	1.4E+01	1.1E+01	na	3.0E+01	5.93E+00
Phenol	0	--	--	na	8.6E+05	--	--	na	8.6E+05	--	--	--	--	--	--	--	--	--	--	na	8.6E+05	--
Pyrene	0	--	--	na	4.0E+03	--	--	na	4.0E+03	--	--	--	--	--	--	--	--	--	--	na	4.0E+03	--
Radionuclides Gross Alpha Activity (pCi/L)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--	--
Beta and Photon Activity (mrem/yr)	0	--	--	na	4.0E+00	--	--	na	4.0E+00	--	--	--	--	--	--	--	--	--	--	na	4.0E+00	--
Radium 226 + 228 (pCi/L)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--	--
Uranium (ug/l)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--	--
Selenium, Total Recoverable	0	2.0E+01	5.0E+00	na	4.2E+03	2.0E+01	5.0E+00	na	4.2E+03	--	--	--	--	--	--	--	--	2.0E+01	5.0E+00	na	4.2E+03	3.01E+00
Silver	0	1.0E+01	--	na	--	1.0E+01	--	na	--	--	--	--	--	--	--	--	--	1.0E+01	--	na	--	4.12E+00
Sulfate	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--	--
1,1,2,2-Tetrachloroethane <sup>C</sup>	0	--	--	na	4.0E+01	--	--	na	4.0E+01	--	--	--	--	--	--	--	--	--	--	na	4.0E+01	--



Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations				Lowest LTA
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	
Tetrachloroethylene <sup>C</sup>	0	--	--	na	3.3E+01	--	--	na	3.3E+01	--	--	--	--	--	--	--	--	--	--	na	3.3E+01	--
Thallium	0	--	--	na	4.7E-01	--	--	na	4.7E-01	--	--	--	--	--	--	--	--	--	--	na	4.7E-01	--
Toluene	0	--	--	na	6.0E+03	--	--	na	6.0E+03	--	--	--	--	--	--	--	--	--	--	na	6.0E+03	--
Total dissolved solids	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--	--
Toxaphene <sup>C</sup>	0	7.3E-01	2.0E-04	na	2.8E-03	7.3E-01	2.0E-04	na	2.8E-03	--	--	--	--	--	--	--	--	7.3E-01	2.0E-04	na	2.8E-03	1.20E-04
Tributyltin	0	4.6E-01	7.2E-02	na	--	4.6E-01	7.2E-02	na	--	--	--	--	--	--	--	--	--	4.6E-01	7.2E-02	na	--	4.33E-02
1,2,4-Trichlorobenzene	0	--	--	na	7.0E+01	--	--	na	7.0E+01	--	--	--	--	--	--	--	--	--	--	na	7.0E+01	--
1,1,2-Trichloroethane <sup>C</sup>	0	--	--	na	1.6E+02	--	--	na	1.6E+02	--	--	--	--	--	--	--	--	--	--	na	1.6E+02	--
Trichloroethylene <sup>C</sup>	0	--	--	na	3.0E+02	--	--	na	3.0E+02	--	--	--	--	--	--	--	--	--	--	na	3.0E+02	--
2,4,6-Trichlorophenol <sup>C</sup>	0	--	--	na	2.4E+01	--	--	na	2.4E+01	--	--	--	--	--	--	--	--	--	--	na	2.4E+01	--
2-(2,4,5-Trichlorophenoxy) propionic acid (Silvex)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--	--
Vinyl Chloride <sup>C</sup>	0	--	--	na	2.4E+01	--	--	na	2.4E+01	--	--	--	--	--	--	--	--	--	--	na	2.4E+01	--
Zinc	0	2.0E+02	2.0E+02	na	2.6E+04	2.0E+02	2.0E+02	na	2.6E+04	--	--	--	--	--	--	--	--	2.0E+02	2.0E+02	na	2.6E+04	8.15E+01

Notes:

- All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
- Discharge flow is highest monthly average or Form 2C maximum for Industries and design flow for Municipals
- Metals measured as Dissolved, unless specified otherwise
- "C" indicates a carcinogenic parameter
- Regular WLAs are mass balances (minus background concentration) using the % of stream flow entered above under Mixing Information.  
Antidegradation WLAs are based upon a complete mix.
- Antideg. Baseline =  $(0.25(\text{WQC} - \text{background conc.}) + \text{background conc.})$  for acute and chronic  
=  $(0.1(\text{WQC} - \text{background conc.}) + \text{background conc.})$  for human health
- WLAs established at the following stream flows: 1Q10 for Acute, 30Q10 for Chronic Ammonia, 7Q10 for Other Chronic, 30Q5 for Non-carcinogens and Harmonic Mean for Carcinogens. To apply mixing ratios from a model set the stream flow equal to (mixing ratio - 1), effluent flow equal to 1 and 100% mix.

Metal	Target Value (SSTV)
Antimony	6.4E+02
Arsenic	9.0E+01
Barium	na
Cadmium	1.1E+00
Chromium III	7.4E+01
Chromium VI	6.4E+00
Copper	9.1E+00
Iron	na
Lead	1.8E+01
Manganese	na
Mercury	4.6E-01
Nickel	2.1E+01
Selenium	3.0E+00
Silver	4.0E+00
Zinc	7.9E+01

Note: do not use QL's lower than the minimum QL's provided in agency guidance

5/26/2011 4:17:04 PM

Facility = Riverside Convalescent Center  
Chemical = Ammonia  
Chronic averaging period = 30  
WLAa = 10.1  
WLAc =  
Q.L. = 0.2  
# samples/mo. = 1  
# samples/wk. = 1

Summary of Statistics:

# observations = 11  
Expected Value = 6.22148  
Variance = 1.49247  
C.V. = 0.196362  
97th percentile daily values = 8.80185  
97th percentile 4 day average = 7.44429  
97th percentile 30 day average = 6.64103  
# < Q.L. = 0  
Model used = lognormal

No Limit is required for this material

The data are:

9.7  
7.1  
6.5  
6.1  
5.5  
5.4  
4.8  
6.2  
4.9  
5.8  
6.4

Additional Ammonia Data				
Received Date	Concentration			
November 26, 2011	9.7 mg/L			
April 26, 2011	7.1 mg/L	6.5 mg/L		
May 9, 2011	6.1 mg/L	5.5 mg/L	5.4 mg/L	4.8 mg/L
May 16, 2011	6.2 mg/L	4.9 mg/L		
May 23, 2011	5.8 mg/L	6.4 mg/L		

Please note that due to intermittent nature of the permittee's discharge (1/week), only the acute wasteload allocation was entered into the STATS program to determine the effluent limitation for this parameter.

## Chloride

3/25/2011 7:44:37 AM

Facility = Riverside Convalescent Center  
Chemical = Chloride (mg/L)  
Chronic averaging period = 4  
WLAA = 860  
WLAC =  
Q.L. = 6  
# samples/mo. = 1  
# samples/wk. = 1

### Summary of Statistics:

# observations = 1  
Expected Value = 162  
Variance = 9447.84  
C.V. = 0.6  
97th percentile daily values = 394.213  
97th percentile 4 day average = 269.534  
97th percentile 30 day average = 195.380  
# < Q.L. = 0  
Model used = BPJ Assumptions, type 2 data

No Limit is required for this material

The data are:

162 mg/L

Please note that due to intermittent nature of the permittee's discharge (1/week), only the acute wasteload allocation was entered into the STATS program to determine Reasonable Potential for this parameter.

## Total Copper

3/24/2011 4:24:16 PM

Facility = Riverside Convalescent Center  
Chemical = Total Copper  
Chronic averaging period = 4  
WLAA = 24  
WLAC = 15  
Q.L. = 5  
# samples/mo. = 1  
# samples/wk. = 1

### Summary of Statistics:

# observations = 1  
Expected Value = 7.5  
Variance = 20.25  
C.V. = 0.6  
97th percentile daily values = 18.2506  
97th percentile 4 day average = 12.4784  
97th percentile 30 day average = 9.04539  
# < Q.L. = 0  
Model used = BPJ Assumptions, type 2 data

No Limit is required for this material

The data are:

7.5 µg/L

3/28/2011 4:08:12 PM

Facility = Riverside Convalescent Center  
Chemical = TRC  
Chronic averaging period = 4  
WLAa = 19  
WLAc =  
Q.L. = 100  
# samples/mo. = 1  
# samples/wk. = 1

Summary of Statistics:

# observations = 1  
Expected Value = 20000  
Variance = 1440000  
C.V. = 0.6  
97th percentile daily values = 48668.3  
97th percentile 4 day average = 33275.8  
97th percentile 30 day average = 24121.0  
# < Q.L. = 0  
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Acute Toxicity  
Maximum Daily Limit = 19  
Average Weekly limit = 19  
Average Monthly Limit = 19

The data are:

20000 mg/L

Please note that due to intermittent nature of the permittee's discharge (1/week), only the acute wasteload allocation was entered into the STATS program to determine the effluent limitation for this parameter.

## Zinc

3/24/2011 4:51:55 PM

Facility = Riverside Convalescent Center  
Chemical = Zinc  
Chronic averaging period = 4  
WLAA = 200  
WLAC = 200  
Q.L. = 10  
# samples/mo. = 1  
# samples/wk. = 1

### Summary of Statistics:

# observations = 1  
Expected Value = 10  
Variance = 36  
C.V. = 0.6  
97th percentile daily values = 24.3341  
97th percentile 4 day average = 16.6379  
97th percentile 30 day average = 12.0605  
# < Q.L. = 0  
Model used = BPJ Assumptions, type 2 data

No Limit is required for this material

The data are:

10 µg/L

Riverside Convalescent Center (VA0071641)  
Nutrient Evaluation - 2011 Permit Reissuance

EQUIVALENT MUNICIPAL NUTRIENT LOADS FOR INDUSTRIAL DISCHARGERS WHICH WARRANT COVERAGE UNDER THE CHESAPEAKE BAY  
WATERSHED NUTRIENT GENERAL PERMIT

2,300 lbs/year TN or 300 lbs/year TP = STP with a design capacity of 0.04 MGD;  
5,700 lbs/year TN or 760 lbs/year TP = STP with a design capacity of 0.1 MGD;  
28,500 lbs/year TN or 3,800 lbs/year TP = STP with a design capacity of 0.5 MGD.

Total Nitrogen	=	Nitrate/Nitrite	+	Total Kjeldahl Nitrogen (TKN)
Total Phosphorus	=	Inorganic Phosphorus (Orthophosphate)	+	Organic Phosphorus

				Test Results		
Nitrate/Nitrite Concentration Provided with Application Testing Data (mg/L) ►				0.040		
Orthophosphate Concentration Provided with Application Testing Data (mg/L) ►				1.13		
Ammonia Concentration Provided with Application Testing Data (mg/L) * ►				9.7		
Monthly Average Flow (MGD)	Projected Annual Nitrate/Nitrite Load	Projected Annual Orthophosphate Load	Projected TKN Concentration Discharged from the Facility *	Projected Organic Phosphorus Concentration Discharged from the Facility **	Projected Annual TKN Load	Projected Annual Organic Phosphorus Load
	(lbs/yr)	(lbs/yr)	(mg/L)	(mg/L)	(lbs/yr)	(lbs/yr)
0.0020	0.24	6.88	24.25	0	147.72	0

Projected Nutrients Discharged from this Facility

Total Nitrogen	Daily Conc.(mg/L)	24.290	=	0.04	+	24.25
	Annual Load (lbs/yr)	147.96		0.24		147.72
Total Phosphorus	Daily Conc. (mg/L)	1.13	=	1.13	+	0
	Annual Load (lbs/yr)	6.88		6.88		0

- Assumptions:
- 1) The facility discharges the reported monthly average flow on a daily basis.
  - 2) Nitrate-Nitrite is discharged at 0.040 mg/L on a daily basis.
  - \* 3) Ammonia comprises 40% of TKN and is discharged at 9.7 mg/L on a daily basis.
  - 4) Orthophosphate is discharged at 1.13 mg/L on a daily basis.
  - \*\* 5) Organic phosphorus is not discharged by this facility because organic solids are not likely to exist in the permittee's wastewater.

**Conclusion:** Based on the the conservative evaluation conducted above, the permittee is **NOT** expected to discharge nutrients at concentrations high enough to be considered a significant discharger of nutrients to the Chesapeake Bay.

Riverside Convalescent Center  
VA0071641  
Fact Sheet Attachments

**Attachment F**

NPDES Permit Rating Worksheet



# NPDES PERMIT RATING WORK SHEET

NPDES NO. VA0071641

- ☐ Regular Addition  
☐ Discretionary Addition  
☒ Score change, but no status change  
☐ Deletion

Facility Name: Riverside Convalescent Center

City: Mathews County, VA

Receiving Water: UT Put-in Creek

Reach Number: \_\_\_\_\_

*Is this facility a steam electric power plant (SIC=4911) with one or more of the following characteristics?*

1. Power output 500 MW or greater (not using a cooling pond/lake)
2. A nuclear power plant
3. Cooling water discharge greater than 25% of the receiving stream's 7Q10 flow rate

☐ YES; score is 600 (stop here) ☒ NO (continue)

*Is this permit for a municipal separate storm sewer serving a population greater than 100,000?*

- ☐ YES; score is 700 (stop here)  
☒ NO (continue)

## FACTOR 1: Toxic Pollutant Potential

PCS SIC Code: \_\_\_\_\_ Primary SIC Code: 4941 Other SIC Codes: \_\_\_\_\_  
 Industrial Subcategory Code: \_\_\_\_\_ (Code 000 if no subcategory)

*Determine the Toxicity potential from Appendix A. Be sure to use the TOTAL toxicity potential column and check one)*

Toxicity Group	Code	Points	Toxicity Group	Code	Points	Toxicity Group	Code	Points
<input type="checkbox"/> No process waste streams	0	0	<input type="checkbox"/> 3.	3	15	<input checked="" type="checkbox"/> 7.	7	35
<input type="checkbox"/> 1.	1	5	<input type="checkbox"/> 4.	4	20	<input type="checkbox"/> 8.	8	40
<input type="checkbox"/> 2.	2	10	<input type="checkbox"/> 5.	5	25	<input type="checkbox"/> 9.	9	45
			<input type="checkbox"/> 6.	6	30	<input type="checkbox"/> 10.	10	50

Code Number Checked: 7

**Total Points Factor 1:** 35

## FACTOR 2: Flow/Stream Flow Volume *(Complete either Section A or Section B; check only one)*

Section A ☒ Wastewater Flow Only Considered

Wastewater Type (See Instructions)		Code	Points
Type I: Flow < 5 MGD	<input checked="" type="checkbox"/>	11	0
Flow 5 to 10 MGD	<input type="checkbox"/>	12	10
Flow > 10 to 50 MGD	<input type="checkbox"/>	13	20
Flow > 50 MGD	<input type="checkbox"/>	14	30
Type II: Flow < 1 MGD	<input type="checkbox"/>	21	10
Flow 1 to 5 MGD	<input type="checkbox"/>	22	20
Flow > 5 to 10 MGD	<input type="checkbox"/>	23	30
Flow > 10 MGD	<input type="checkbox"/>	24	50
Type III: Flow < 1 MGD	<input type="checkbox"/>	31	0
Flow 1 to 5 MGD	<input type="checkbox"/>	32	10
Flow > 5 to 10 MGD	<input type="checkbox"/>	33	20
Flow > 10 MGD	<input type="checkbox"/>	34	30

Section B ☐ Wastewater and Stream Flow Considered

Wastewater Type (See Instructions)	Percent of instream Wastewater Concentration at Receiving Stream Low Flow		Code	Points
Type I/III:	< 10 %	<input type="checkbox"/>	41	0
	10 % to < 50 %	<input type="checkbox"/>	42	10
	> 50 %	<input type="checkbox"/>	43	20
Type II:	< 10 %	<input type="checkbox"/>	51	0
	10 % to < 50 %	<input type="checkbox"/>	52	20
	> 50 %	<input type="checkbox"/>	53	30

Code Checked from Section A or B: 11

**Total Points Factor 2:** 0

**FACTOR 3: Conventional Pollutants***(only when limited by the permit)*NPDES NO: VA0071641A. Oxygen Demanding Pollutant: (check one) ☐ BOD ☐ COD ☐ Other: \_\_\_\_\_

Permit Limits: (check one) ▶		Code	Points
<input type="checkbox"/>	< 100 lbs/day	1	0
<input type="checkbox"/>	100 to 1000 lbs/day	2	5
<input type="checkbox"/>	> 1000 to 3000 lbs/day	3	15
<input type="checkbox"/>	> 3000 lbs/day	4	20

Code Checked: 1Points Scored: 0

B. Total Suspended Solids (TSS)

Permit Limits: (check one) ▶		Code	Points
<input type="checkbox"/>	< 100 lbs/day	1	0
<input type="checkbox"/>	100 to 1000 lbs/day	2	5
<input type="checkbox"/>	> 1000 to 5000 lbs/day	3	15
<input type="checkbox"/>	> 5000 lbs/day	4	20

Code Checked: 1Points Scored: 0C. Nitrogen Pollutant: (check one) ☐ Ammonia ☐ Other: \_\_\_\_\_

Permit Limits: (check one) ▶	Nitrogen Equivalent	Code	Points
<input type="checkbox"/>	< 300 lbs/day	1	0
<input type="checkbox"/>	300 to 1000 lbs/day	2	5
<input type="checkbox"/>	> 1000 to 3000 lbs/day	3	15
<input type="checkbox"/>	> 3000 lbs/day	4	20

Code Checked: 1Points Scored: 0Total Points Factor 3: 0**FACTOR 4: Public Health Impact**

*Is there a public drinking water supply located within 50 miles downstream of the effluent discharge (this includes any body of water to which the receiving water is a tributary)? A public drinking water supply may include infiltration galleries, or other methods of conveyance that ultimately get water from the above referenced supply.*

☐ YES (If yes, check toxicity potential number below)

▶ NO (If no, go to Factor 5)

Determine the *human health* toxicity potential from Appendix A. Use the same SIC code and subcategory reference as in Factor 1. (Be sure to use the human health toxicity group column ☐ check one below)

Toxicity Group	Code	Points	Toxicity Group	Code	Points	Toxicity Group	Code	Points
<input type="checkbox"/> No process waste streams	0	0	<input type="checkbox"/> 3.	3	0	<input type="checkbox"/> 7.	7	15
<input type="checkbox"/> 1.	1	0	<input type="checkbox"/> 4.	4	0	<input type="checkbox"/> 8.	8	20
<input type="checkbox"/> 2.	2	0	<input type="checkbox"/> 5.	5	5	<input type="checkbox"/> 9.	9	25
			<input type="checkbox"/> 6.	6	10	<input type="checkbox"/> 10.	10	30

Code Number Checked: \_\_\_\_\_

Total Points Factor 4: 0

**FACTOR 5: Water Quality Factors**NPDES NO: VA0071641

- A. *Is (or will) one or more of the effluent discharge limits based on water quality factors of the receiving stream (rather than technology-based federal effluent guidelines, or technology-based state effluent guidelines), or has a wasteload allocation been assigned to the discharge:*

		Code	Points
<input checked="" type="radio"/>	Yes	1	10
<input type="radio"/>	No	2	0

- B. *Is the receiving water in compliance with applicable water quality standards for pollutants that are water quality limited in the permit?*

		Code	Points
<input checked="" type="radio"/>	Yes	1	0
<input type="radio"/>	No	2	5

- C. *Does the effluent discharged from this facility exhibit the reasonable potential to violate water quality standards due to whole effluent toxicity?*

		Code	Points
<input type="radio"/>	Yes	1	10
<input checked="" type="radio"/>	No	2	0

Code Number Checked: A 1 B 1 C 2Points Factor 5: A 10 + B 0 + C 0 = 10 TOTAL**FACTOR 6: Proximity to Near Coastal Waters**

- A. *Base Score: Enter flow code here (from Factor 2):* 11 *Enter the multiplication factor that corresponds to the flow code:* 0.00

Check appropriate facility HPRI Code (from PCS):

HPRI#	Code	HPRI Score	Flow Code	Multiplication Factor
<input type="radio"/>	1	1	20	
<input type="radio"/>	2	2	0	
<input checked="" type="radio"/>	3	3	30	
<input type="radio"/>	4	4	0	
<input type="radio"/>	5	5	20	
			11, 31, or 41	0.00
			12, 32, or 42	0.05
			13, 33, or 43	0.10
			14 or 34	0.15
			21 or 51	0.10
			22 or 52	0.30
			23 or 53	0.60
			24	1.00

HPRI code checked: 3Base Score: (HPRI Score) 30 X (Multiplication Factor) 0.00 = 0.00 (TOTAL POINTS)

- B. *Additional Points* ☐ *NEP Program*  
*For a facility that has an HPRI code of 3, does the facility discharge to one of the estuaries enrolled in the National Estuary Protection (NEP) program (see instructions) or the Chesapeake Bay?*

	Code	Points
<input checked="" type="radio"/> Yes	1	10
<input type="radio"/> No	2	0

- C. *Additional Points* ☐ *Great Lakes Area of Concern*  
*For a facility that has an HPRI code of 5, does the facility discharge any of the pollutants of concern into one of the Great Lakes' 31 areas of concern (see Instructions)*

	Code	Points
<input type="radio"/> Yes	1	10
<input checked="" type="radio"/> No	2	0

Code Number Checked: A 3 B 1 C N/APoints Factor 6: A 0.00 + B 10 + C 0 = 10 TOTAL

## SCORE SUMMARY

NPDES NO: VA0071641

Factor	Description	Total Points
1	Toxic Pollutant Potential	<u>35</u>
2	Flows/Streamflow Volume	<u>0</u>
3	Conventional Pollutants	<u>0</u>
4	Public Health Impacts	<u>0</u>
5	Water Quality Factors	<u>10</u>
6	Proximity to Near Coastal Waters	<u>10</u>
TOTAL (Factors 1 through 6)		<u>55</u>

S1. Is the total score equal to or greater than 80? ☐ Yes (Facility is a major) ☒ No

S2. If the answer to the above questions is no, would you like this facility to be discretionary major?

☒ No

☐ Yes (Add 500 points to the above score and provide reason below:

Reason:

NEW SCORE: 55

OLD SCORE: 45

Jeremy Kazio  
Permit Reviewer's Name

(804) 527-5044  
Phone Number

March 27, 2011  
Date

Riverside Convalescent Center  
VA0071641  
Fact Sheet Attachments

**Attachment G**

VDH-ODW & VDH-DSS Concurrence

RECEIVED  
FEB 03 2011  
PRO



# COMMONWEALTH of VIRGINIA

DEPARTMENT OF HEALTH

## OFFICE OF DRINKING WATER

East Central Field Office

Karen Remley, MD, MBA, FAAP  
State Health Commissioner

J. Wesley Kleene, PhD, PE  
Director, Office of Drinking Water

300 Turner Road  
Richmond, VA 23225  
Phone: 804-674-2880  
Fax: 804-674-2815

TO: Jeremy S. Kazio, Environmental Specialist II, Senior  
Department of Environmental Quality, Piedmont Regional Office

FROM: Bennett K. Ragnauth, P. E., Field Director  
Office of Drinking Water, East Central Field Office

DATE: February 1, 2011

SUBJECT: VPDES Permit Application No. VA0071641 ■ Re-issuance (existing) □ Issuance (new)  
VWP Permit Application No. \_\_\_\_\_

COUNTY/CITY: Mathews County

OWNER/APPLICANT: Newport News General & Non-Sectarian Hospital Association

LOCATION OF DISCHARGE / ACTIVITY Tributary of Put-In Creek

### COMMENTS:

- There are no public water supply intakes within 15 miles downstream of the discharge / activity. We do not object to the permit.
- The raw water intake for the \_\_\_\_\_ waterworks is located \_\_\_\_\_ miles downstream from the discharge. We recommend a minimum Reliability Class \_\_\_\_\_ for this facility [, which is] [the same as the existing Reliability Class] [more stringent than the existing Reliability Class]. We do not object to the permit.
- The raw water intake for the \_\_\_\_\_ waterworks is located \_\_\_\_\_ miles downstream from the discharge. We object to the proposed discharge due to the potential threat to water quality at the public water system intake.
- Γ Please forward a copy of the Draft Permit for our review and comment.
- Other comments:

Reviewer: Azhar N. Mirza, District Engineer

C: VDH, ODW - Central Office

R:\PD18\05-Project Review\01-Application-DEQ\VPDES\Application\Riverside Cony. Center -



# COMMONWEALTH of VIRGINIA

## Department of Health DIVISION OF SHELLFISH SANITATION

109 Governor Street, Room 614-B  
Richmond, VA 23219

Ph: 804-864-7487  
Fax: 804-864-7481

### MEMORANDUM

**DATE:** 2/9/2011  
**TO:** Jeremy Kazio  
Department of Environmental Quality  
**FROM:** B. Keith Skiles, MPH, Classification Chief  
Division of Shellfish Sanitation  
**SUBJECT:** Riverside Convalescent Center

City / County: Mathews

Waterbody: Put In Creek

Type: ☒ VPDES ☐ VMRC ☐ VPA ☐ VWP ☐ JPA ☐ Other:

Application / Permit Number: VA0071641

- ☐ The project will not affect shellfish growing waters.
- ☐ The project is located in approved shellfish growing waters, however, the activity as described will not require a change in classification.
- ☒ The project is located in condemned shellfish growing waters and the activity, as described, will not cause an increase in the size or type of the existing closure.
- ☐ The project will affect condemned shellfish waters and will not cause an increase in the size of the total condemnation. However, a prohibited area (an area from which shellfish relay to approved waters for self-purification is not allowed) will be required within a portion of the currently condemned area. See comments.
- ☐ A buffer zone (including a prohibited area) has been previously established in the vicinity of this discharge, however, the closure will have to be revised. Map attached.
- ☐ This project will affect approved shellfish waters. If this discharge is approved, a buffer zone (including a prohibited area) will be established in the vicinity of the discharge. Map attached.
- ☐ Other.

ADDITIONAL  
COMMENTS:

Area #: 41

bks

Riverside Convalescent Center  
VA0071641  
Fact Sheet Attachments

**Attachment H**

Public Hearing Dispensation Memo



**MEMORANDUM**  
**DEPARTMENT OF ENVIRONMENTAL QUALITY**  
*Piedmont Regional Office*

4949-A Cox Road, Glen Allen, VA 23060-6296

804/527-5020

**SUBJECT:** Dispensation of Requests for a Public Hearing  
VPDES Permit No. VA0071641, Riverside Convalescent Center, Mathews County

**TO:** Curtis J. Linderman, Water Permit Manager

**FROM:** Jeremy S. Kazio, Water Permit Writer

**DATE:** September 6, 2011

**COPIES:** Cindy Berndt, Rick Weeks, James Golden, Mike Murphy, Kyle Winter

**BACKGROUND:**

On November 29, 2010, the Department of Environmental Quality (DEQ) received an application from Newport News General & Non-Sectarian Hospital Association for re-issuance of Virginia Pollutant Discharge Elimination System (VPDES) permit number VA0071641 for the Riverside Convalescent Center water treatment facility located in Mathews, Virginia. The original VPDES permit was issued in 1987, and the most recent permit cycle was reissued on May 23, 2006. The permit is classified as a minor, industrial permit.

The applicant proposes to continue the discharge of greensand filter backwash water to an intermittent freshwater stream at a point 0.25 miles above its confluence with Put-In Creek in the Chesapeake Bay/Atlantic Ocean/Small Coastal Basins. The greensand filter system, which is operated and maintained by Sydnor Hydro, Inc., treats potable water from a single well which provides drinking water to a 24-hour nursing facility. The filters are manually backwashed on a weekly basis, with the effluent directed to two concrete settling basins, each equipped with a drain valve. Just prior to the weekly backwash of the filters, both settling tanks (containing backwash water from the previous week) are drained through a discharge pipe to the nearby tributary of Put-In Creek. Total weekly effluent volume is approximately 2,000 gallons.

The proposed draft permit for re-issuance contains the same limitations and conditions as the 2006 permit, with minor updates to reflect current agency permit protocols. These include additional significant figures requirements, an additional Total Residual Chlorine limitation, updated compliance reporting requirements, new industrial boilerplate Concept Engineering Report requirements, and several revisions to special condition boilerplate language.

For discharges to intermittent streams, receiving water flows under design conditions are expected to be zero. Consequently, reasonable potential analyses and effluent limitation development were undertaken to ensure Water Quality Standards were met "end-of-pipe," or without the benefit of instream dilution. The draft permit proposes to limit the following parameters:

Total Suspended Solids (TSS)	30 mg/L monthly average; 60 mg/L maximum
Total Residual Chlorine (TRC)	0.019 mg/L monthly average; 0.019 mg/L maximum
pH	6.0 S.U. min. and 9.0 S.U. max.

**PUBLIC NOTICE**

The draft permit was public noticed in the *Gloucester-Mathews Gazette-Journal* on 7/7/2011 and on 7/14/2011. Copies of the proposed draft permit and fact sheet are attached.

**PUBLIC COMMENTS**

During the 30-day public comment period, ten (10) comments representing fourteen (14) individuals were received via email only. Of these comments, four (4) were submitted in full compliance with the information requirements outlined in 9VAC25-230-40 of Procedural Rule No. 1. Five (5) comments were

replicates of an initial mass mailing sent by the author of the first comment received. Two (2) employees of the newspaper *Gloucester-Mathews Gazette-Journal* provided comments, and one (1) of the public hearing requests was received from the Mathews County Administrator, who stated that he represented the county's Board of Supervisors.

Two newspapers, the *Gloucester-Mathews Gazette-Journal* and the *Daily Press* ran feature articles regarding this permit's reissuance during the 30 day comment period.

**Summary of Comments Received During the Public Notice Period: 7/7/2011 – 8/8/2011**

**1) Issue: Will the discharge from this facility affect shallow drinking water wells located downstream of the discharge ?**

Comment: There are several shallow private potable wells located downstream of the discharge. Concerns were expressed that water in these wells may be affected by pollutants found present in high concentrations in the effluent, such as Manganese.

(Please Note: This combined summary item is derived from two separate sources, but was expressed by the same commenter. The concern about the effluent generally affecting shallow private wells downstream of the discharge is based on a comment received by email. The concern about Manganese levels in the effluent was expressed in the article appearing in the *Gloucester-Mathews Gazette Journal* in which the same commenter was interviewed.)

Commenter(s): Lynn Gillikin

Staff Response: *The Virginia Water Quality Standards regulations include a criterion for Manganese (9VAC25-260-140.B) to maintain acceptable taste, odor or aesthetic quality of drinking water. However, the manganese criterion does not apply to this discharge because the receiving waters have not been designated as Public Water Supplies (PWS) in accordance with 9VAC25-260-520. On February 1, 2011, the Virginia Department of Health, Office of Drinking Water (VDH-ODW), indicated there were no public drinking water supply intakes within 15 miles downstream of the discharge/activity, and the VDH-ODW expressed no objections to the permit. There is no evidence linking this facility's surface water discharge to causing or contributing to a downstream ground water contaminant plume, nor is there any evidence to suggest that Virginia's Groundwater Standards (9VAC25-280) have been exceeded as a result of this facility's discharge. Permit development was conducted without benefit of instream dilution; consequently, the final effluent itself is designed to meet all surface water quality criterion of 9VAC25-260 at the "end of pipe" and to not cause or further contribute to violations of State water quality standards. The treatment works' settling basins are composed of impermeable concrete, so wastewater retained within the tanks will not have an effect on ground water.*

*DEQ staff recommends that no change to the proposed permit is necessary in response to these comments.*

**2) Issue: Will the salinity of Put-In Creek be affected by the facility's freshwater discharge?**

Comment: Concerns were expressed that the quantity of fresh water will affect the salinity of the creek and the viability of plant and animal life.

Commenter(s): Lynn Gillikin, Mary Ann Carr, David Carr, Valerie S. Adams, Maurice Levis, Elisa Wheeler, Terry King, Martha Ann King, Doris Wohlfort, Reverend Robert W. Wohlfort, Th.D.

Staff Response: *It is not expected that the existing discharge will cause salinity levels within Put In Creek to decrease. The Total Maximum Daily Load (TMDL) Report for Shellfish Areas Impaired by Bacteria, East River and Put-in Creek (September 2007) was developed to address fecal coliform bacteria within the East River and Put-In Creek. This TMDL used a "tidal prism" model to approximate the volume within the majority of Put-In Creek based on area and field depth readings. It was calculated that this portion of the creek contained approximately 39,657,509 gallons of water.*

*Although this volume does not apply to the entire creek, if it were assumed that the discharge from this facility occurred on a daily basis and 100% of the effluent reached Put-In Creek, the effluent would constitute <0.005% of the creek's volume between tidal flux, or less than the contributions from a trace amount of (freshwater) precipitation. This calculated ratio is an overly conservative hypothetical assumption, but supports the expectation that Riverside's discharge will not cause substantial changes to Put-In Creek's salinity levels.*

*DEQ staff recommends that no change to the proposed permit is necessary in response to these comments.*

### **3) Issue: Is there adequate regulatory oversight of the facility?**

Comment: "Riverside is allowed to self-monitor, with no oversight or inspections by any regulatory body."

Commenter(s): Lynn Gillikin, Mary Ann Carr, David Carr, Valerie S. Adams, Maurice Levis, Elisa Wheeler, Terry King, Martha Ann King

Staff Response: *Virginia's VPDES permitting program is based on, and delegated from, the U.S. Environmental Protection Agency's National Pollutant Discharge Elimination System (NPDES) program. On a nation-wide basis, the information submitted to state or federal water pollution control authorities for determination of effluent characterization and/or compliance with existing permits is formulated by the permitted entities themselves. DEQ conducts both routine and risk-based periodic inspections of facilities to verify that the conditions on the ground reflect what has been reported, and permittees are required to use certified laboratories to analyze TSS and other non-field parameters. The routine DEQ inspection schedule for minor industrial VPDES facilities is a minimum of once every five years. Additionally, State Water Control Law (§ 62.1-44.21, § 62.1-44.31, § 62.1-44.34:20, and § 62.1-44.23) provides mechanisms for legal enforcement actions in cases in which it is discovered that a permittee has falsified information submitted to the State Water Control Board (or its representatives). Due to the nature of the discharge, this is regarded as a low-risk facility. No evidence was presented to question the integrity or reliability of the data historically reported by the facility, or to identify any unusual facility operations or adverse environmental impacts to warrant an increase or additional customized regulatory oversight of this facility.*

*DEQ staff recommends that no change to the proposed permit is necessary in response to these comments.*

### **4) Issue: Was it proper for this permit to have been originally authorized without notification of the proposed discharge to downstream riparian landowners?**

Comment: Riparian ownership notification was not provided upon initial issuance of this permit in 1987. Consequently, nearby downstream landowners were not provided an opportunity to object at that time.

Commenter(s): Elsa C. Verbyla, Paul S. Verbyla

Staff Response: *The VPDES permit for this facility was first issued in 1987. The section of the Code of Virginia which mandates riparian ownership notification in cases of new or expanding facilities (§ 62.1-44.15:4) was not promulgated until 1988. Consequently, there was no statutory requirement in place for providing downstream riparian ownership notification at the time of this permit's original issuance. Each permit action must stand on its own merits. As the current proposed permit action is not for a new or expanding discharge, riparian notification is not a relevant issue to the current proposed permit action.*

*DEQ staff recommends that no change to the proposed permit is necessary in response to these comments.*

**5) Issue: Will the discharge contribute to an “existing sludge problem” in Put-In Creek?**

- 1) Comment: The discharge has/will contribute(d) to the supposed sludge currently floating on Put-In Creek

Commenter(s): Lynn Gillikin, Mary Ann Carr, David Carr, Valerie S. Adams, Maurice Levis, Elisa Wheeler, Terry King, Martha Ann King, Doris Wohlfort, Reverend Robert W. Wohlfort, Th.D.

Staff Response: *This facility's effluent is characterized as water originating from the backwashing action of a greensand filter which is used to remove iron and manganese from drinking water. The origination of the effluent is not conducive to the production of any type of sludge, and residuals or sludge generated by industrial facilities are not currently regulated by the NPDES Program. Regardless, Total Suspended Solids (TSS) are limited by the permit in accordance with current agency guidance for Water Treatment Plants to ensure effluent clarity and avoidance of downstream sedimentation. Although there may be suspended solids in the backwash water, treatment is provided by use of concrete tanks to allow the effluent to settle for approximately one week prior to discharge. In addition, the proposed permit requires the Operations and Maintenance (O&M) Manual for the facility to include a plan for the management and/or disposal of waste solids and residuals and to operate the treatment works in accordance with the approved O&M Manual. At the level of performance stipulated in the proposed permit, this facility is not expected to be a contributor of sludge to the intermittent receiving stream or to Put-In Creek located approximately 0.25 miles downstream.*

*DEQ staff recommends that no change to the proposed permit is necessary in response to these comments.*

**6) Issue: Will reissuance of this permit set a precedent for other industrial discharges to Put-In Creek?**

Comment: The permit reissuance will set a precedent for additional industrial discharges to Put-In Creek.

Commenter(s): Lynn Gillikin

Staff Response: *It is DEQ's obligation to evaluate permit applications it receives in order to determine the impact to State waters in accordance with the Virginia Water Quality Standards (9 VAC 25-260), and to assign effluent limitations to a facility in order to maintain these Standards. The number of potential future discharges to Put-In Creek is not relevant to DEQ's determination of applicable State environmental regulations with respect to the subject permit reissuance, and is also influenced by local land use decisions that are not within the jurisdictional role of DEQ.*

*DEQ staff recommends that no change to the proposed permit is necessary in response to these comments.*

**7) Issue: Why doesn't the permit limit the effluent flow volume from this facility?**

- 1) Comment: The discharge rate from this facility is not limited by the permit, despite references to the permittee discharging on a once-per-week basis.

Commenter(s): Lynn Gillikin, Mary Ann Carr, David Carr, Valerie S. Adams, Maurice Levis, Elisa Wheeler, Terry King, Martha Ann King

Staff Response: *This facility is classified as an “industrial” facility because the primary source of its influent is not domestic sewerage. Unlike permits to “municipal” facilities (i.e., discharging domestic sewerage), permits issued to industrial facilities do not limit discharge flow rates or volumes because doing so may hinder industrial production at that facility. For potable water treatment plants, operational flexibility is needed to allow more frequent backwashing to occur if needed to ensure efficient and effective treatment processes and the quality of their finished*

product. Nonetheless, the permittee is expected to comply with the limitations and conditions set forth in their permit based on the Virginia Water Quality Standards (9 VAC 25-260), other applicable Federal and State laws or regulations, and information contained in their permit application. The application for the proposed permit re-issuance indicated an average flow of 2,000 gallons of wastewater per day (gpd) may be generated from the backwashing of the greensand filters. Discharges occur only when an operator is on-site to backwash the filters, which normally is done weekly. This is consistent with previous permit cycle applications as well as historical monitoring data reported by the permittee on Discharge Monitoring Reports (DMRs) submitted to DEQ. For Riverside's permit reissuance, limitations and conditions contained in the permit were developed based on design conditions that used an average discharge rate of 2,000 gpd over a maximum continuous discharge duration of three consecutive days. However, due to the intermittent batch nature of the backwash process, these are overly conservative assumptions (i.e., that do not reflect normal operations) and provide for a significant factor of safety in the proposed permit requirements protecting downstream water quality and the aquatic community.

DEQ staff recommends that no change to the proposed permit is necessary in response to these comments.

**8) Issue: Should other alternatives to the point source discharge of wastewater at the proposed outfall location be evaluated/pursued?**

Comment: Sewerage generated from this facility is directed to the existing public sewer conveyance system currently in place. The permittee should also be required to discharge their backwash water into the public sewer.

Commenter(s): Lynn Gillikin, Elsa C. Verbyla, Paul S. Verbyla

Staff Response: It is DEQ's obligation to evaluate permit applications it receives to determine the impact to State waters in accordance with the Water Quality Standards, and to assign effluent limitations to a facility in order to maintain these Standards. The requirement to utilize an existing public sewer conveyance system is the prerogative of local government, as permitted by the conveyance system's owner, and therefore is not within DEQ staff's jurisdiction to consider as a basis to re-issue, modify, or deny the proposed permit.

DEQ staff recommends that no change to the proposed permit is necessary in response to these comments.

**9) Issue: Will/Does the existing discharge have an effect on shellfish harvesting in Put-In Creek?**

Comment: "Page 47 of Factsheet implies this discharge is acceptable because Put-In Creek is already rated condemned, so discharge cannot 'worsen' that status."

Commenter(s): Lynn Gillikin

Staff Response: In a letter dated February 9, 2011, the Virginia Department of Health—Division of Shellfish Sanitation (VDH-DSS) stated that "The project is located in condemned shellfish growing waters and the activity, as described, will not cause an increase in size or type of the existing closure." As background, VDH shellfish restrictions are based on ambient levels of fecal coliform bacteria in identified shellfish growing areas. The VDH-DSS has assigned two different types of shellfish closures to Put-In Creek. The upper portion of tidal Put-In Creek (area 041-005B) has been designated as a "prohibited" shellfish growing area due to the former discharge from the HRSD Mathews Sewage Wastewater Treatment Plant. This prohibited area is also where the intermittent tributary which receives Riverside Convalescent Center's discharge joins tidal Put-In Creek. In prohibited areas, shellfish are not allowed to be harvested for market. The lower portion of tidal Put-In Creek (area 041-005A) has been designated as a "condemned" shellfish growing area, where harvested shellfish must first be transported for depuration in other non-condemned waters for 30 days prior to consumption or sale. The Total Maximum Daily Load (TMDL) Report for Shellfish Areas Impaired by Bacteria, East River and Put-in Creek, September

*2007 applies to the portion of Put-In Creek corresponding to shellfish area 041-005A. As an industrial potable drinking water treatment facility, the Riverside Convalescent Center discharge is not considered a source of fecal coliform bacteria, and was not assigned a waste load allocation in the TMDL Report. Since the existing discharge is not considered a source of fecal coliform bacteria, and will not expand the current shellfish harvest prohibited or condemned zones, the discharge will have no effect on the ability to harvest shellfish in Put-In Creek.*

*DEQ staff recommends that no change to the proposed permit is necessary in response to these comments.*

**LIST OF COMMENTERS:**

Lynn Gillikin  
Mary Ann and David Carr  
Valerie S. Adams  
Maurice Levis and Elisa Wheeler  
Terry and Martha Ann King  
Reverend Robert W. Wohlfort, Th.D.  
Betty Wren Day  
Steve Whiteway, Mathews County Administrator  
Elsa Cooke Verbyla  
Paul S. Verbyla

**STAFF RECONCILIATION ATTEMPTS:**

In a single email sent to eight (8) commenters on Jul 25, 2011, DEQ staff attempted to reconcile the following concerns:

- 1) Actual effluent flow from the facility (2,000 gallons per week) versus the value represented by permit evaluation flow volume units (0.0020 MGD);
- 2) The affect of this freshwater discharge on a "saltwater" creek;
- 3) The "purity" of the effluent;
- 4) The discharge being monitored by the permittee versus a government agency;
- 5) The affect of the current discharge on the existing shellfish condemnation on Put-In Creek;
- 6) Private wells located downstream of the discharge; and
- 7) The tributary which receives the discharge may be tidal rather than freshwater with intermittent flows.

A response was received from Ms. Gillikin the same day expressing concern that staff had not adequately addressed the discrepancy between actual and permitted flow volumes. The reply also questioned which pollutants were evaluated during permit development, as well as questioned why the facility was not required to direct their backwash discharge into public sewer.

A follow-up email was sent by staff to the same eight commenters mentioned above on July 26, 2011. The follow-up email noted the location in the Fact Sheet (a copy of which was provided to Ms. Gillikin on July 22, 2011) where an explanation could be found listing DEQ's evaluation of 31 pollutants. Staff also included a scanned portion of the permittee's application for reissuance in which the permittee indicated the details of the intermittent nature of the permittee's discharge. A reply was received by email from Ms. Gillikin the same day which inquired as to where the discharge flow volume was limited in the permit. The commenter also expressed disappointment that a portion of staff's pollutant evaluations was conducted on the facility's finished drinking water rather than the facility's effluent.

Staff followed up by telephone with Ms. Gillikin on August 10, 2011 to explain that the permittee was required to submit effluent data for required pollutants, and that the evaluation of pollutants in the facility's

finished water was done for conservative purposes due to the fact that the permittee included several laboratory reports in his application which were for determining compliance with the facility's Public Water Supply permit issued by the Virginia Department of Health-Office of Drinking Water.

Staff replied to one additional comment from Ms. Verbyla received by email on August 5, 2011 to explain why riparian ownership notification was not provided upon the permit's original issuance.

On August 23, 2011, staff met with Mr. Whiteway, Mathews County Administrator to brief him on the proposed permit and discharge operations. Later that day, staff visited the Riverside Convalescent Center and examined the concrete settling tanks and the outfall and receiving stream. The facility appeared to be well maintained and staff observed no visible effects of the discharge from the permitted activity upon the Unnamed Tributary to Put-In Creek.

Staff has offered to prepare a Frequently Asked Questions (FAQ) document to assist Mathews County in responding to post-comment period citizen inquiries regarding the Riverside Convalescent Center discharge and treatment operations.

**CRITERIA FOR DISPENSING REQUESTS FOR PUBLIC HEARING:**

§62.1-44.15:02.C of the Code of Virginia and 9VAC 25-230-50.A of Procedural Rule No. 1 states that for a public hearing to be granted: a) there must be significant public interest; b) there are substantial, disputed issues relevant to the issuance of the permit in question; and c) the action requested is not on its face inconsistent with, or in violation of, the State Water Control Law, federal law or any regulation promulgated thereunder. §62.1-44.15:02.C.1 of the Code further defines significant public interest as evidenced by the receipt of a minimum of 25 individual requests for public hearing or Board consideration.

**STAFF RECOMMENDATIONS:**

Staff finds the number of individual requests for public hearing received does not meet the statutory requirements of significant public interest to qualify for convening a public hearing for the VPDES reissuance of permit VA0071641, Riverside Convalescent Center.

In addition, DEQ staff finds the proposed VPDES discharge permit VA0071641 to have been prepared in accordance with all applicable statutes, regulations and agency practices; the effluent limits and conditions in the permit have been adequately established to protect instream beneficial uses, fish and wildlife resources, and to maintain all applicable water quality standards; and all public comments relevant to the permit have been considered. It is recommended the reissuance of VPDES permit VA0071641 be approved as public noticed.

**STAFF CONTACT:**

Jeremy S. Kazio  
DEQ Piedmont Regional Office  
4949-A Cox Road, Glen Allen, VA 23060  
Phone: (804)527-5044  
Email: Jeremy.Kazio@deq.virginia.gov

APPROVED:

  
Water Permit Manager

Date:

September 6, 2011